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Edited Under the Direction of the Board of Trustees

VOLUME 40, JANUARY-DECEMBER, 1941

Issued by Northwest Medical Publishing Association
PORTLAND, ORE. SEATTLE, WASH. BOISE, IDAHO

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NORTHWEST MEDICINE

THE JOURNAL OF THE STATE MEDICAL ASSOCIATIONS OF OREGON, WASHINGTON, IDAHO

ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION

Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879.
Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 3, 1917, authorized July 31, 1918.

Vol. 40, No. 1 JANUARY, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

GREETINGS FOR THE NEW YEAR

A year ago the outlook for the whole world was gloomy, the war in Europe increasing with appalling rapidity. The culmination of the victorious progress of the conqueror has increased the gloomy outlook during the year. We begin another year with the war terror in no way diminished and the possibility of our own involvement. Such a prospect does not warrant greetings of joy for the coming months. Yet we Americans must stand ever ready to support the principles on which our nation is founded, and which we shall expect to maintain unaffected by conflicts elsewhere. We are assured that business prospects will be greatly improved during the coming year, owing primarily to the tremendous expansion of industry for the production of war materials and implements. What a sad outlook on which to contemplate the growth of prosperity! What permanence can we anticipate from such an expansion of business and widespread prosperity after the holocaust of war has ended its overwhelming destruction and peace is established?

In the progress of medicine one can contemplate nothing but satisfaction and belief in future expansion for the benefit of mankind. Discovery of new remedies largely in the field of chemotherapy, excursions into the unknown by means of the ultra microscope warrant the belief that hitherto unknown remedies are likely to be discovered which will help to alleviate human suffering. Even the existence and progress of warfare will not check developments along these lines which are progressing in our own country, and which we believe have prospects of further expansion. Therefore, it is not unreasonable to extend greetings for the New Year, with the expectations of progress along medical lines. At the same time, to whatever extent our nation may be compelled to prepare for its own defense and assistance in the maintenance of democratic institutions, the medical profession will not fail in providing its share in defending the honor and stability of our country.

IS IT PRELUDE TO STATE MEDICINE?

Washington physicians were caught napping in the recent election by passage of a measure which well illustrates the insidiousness of certain types of legislation and the necessity for constant vigilance if standards are to be maintained. Initiative measure 141 was titled "Senior Citizens Grants Act" and in the descriptive title which appeared on ballots and the panels of voting machines there were ninety-nine words, among which were the following, "An act providing a minimum of $40 monthly to senior citizens over the age of sixty-five years—providing for burial expenses and other care, —repealing all other acts in conflict herewith."

In the body of the act appear the usual definitions, qualifications, rules and regulations and in Section 15, the following, "In addition to Senior Citizen Grants, the Department shall provide for those eligible medical, dental, surgical, optical, hospital and nursing care by a doctor of recipient's own choosing; and shall also provide artificial limbs, eyes, hearing aids and other needed appliances."

The purpose of the act as a whole is a worthy one and it is easy to see how generous minded voters passed it without question. No one could criticise an attempt to care for the destitute aged. But only on very careful consideration and rereading of the above section 15 do the possibilities become apparent. This is the sort of thing our officers and members of legislative committees have been worrying about for years. It is the sort of thing passed over by the average physician with a shrug of the shoulders and a "let George do it" attitude. Now, however, the measure has been passed by vote of the people, it is a law of the State of Washington and the Department of Social Security is obliged to proceed as it directs. Competent legal advice indicates that it will be upheld by the courts.

Undoubtedly it is now too late to do anything about this measure. Its provisions will very likely be carried out as fully as finances of the state will permit. It will be costly in terms of money but it will no doubt be far more costly in terms of destruction of standards and principles for which we have long stood. The only lesson apparent at the moment is the fact that officers of our associations know what they are talking about when they discuss threats such as this. They should be listened to and they should be supported. A mistake such as this one should not be permitted again. Can this be the initiation of state medicine?

CONFERENCE OF MEDICAL EXECUTIVES

The fourth annual meeting of Pacific States Medical Executives Conference which met in Portland, December 8, was attended by sixty physicians from California, Oregon, Washington and Idaho. Representatives from Nevada were unable to attend.

"Coverage by Insurance or other Prepayment Plans for Families of Low Wage Employee Groups" was a subject freely discussed by various Medical Service Bureau managers. These discussions, coming from laymen, were extremely beneficial, so the physicians present requested that Bureau representatives be called to any conference that had medical service plans to consider.

Also present were representatives from the Farm Rehabilitation Administration groups of California, Oregon, Washington and Idaho. Federal and state legislation were freely discussed, and several suggestions were given to the various state officers to take to their trustees for consideration. Much light was thrown on medical military preparedness, a subject which is not understood by the average physician.

At the business session, the Constitution was amended so that there would be a larger group among the officers of the Conference.

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LISTING POSTGRADUATE COURSES

In each of our states have been established postgraduate courses of lectures intended to bring to the local profession latest information on medical developments and progress of advances in therapy. Since a comparatively few of us can regularly attend medical centers where this information is available at their sites of origin, postgraduate lecture courses have been established for local and regional presentation.

In order that these opportunities may receive suitable publicity, a page will hereafter be devoted to listing these various courses. Limitation of space will prevent much of detail concerning them, if they are presented in large numbers, but sufficient information will be contained to offer the main features of each, with the names of their respective lecturers. An invitation is extended to officials of our three state organizations to keep the journal posted with such information as it is desired to have presented, as much as possible of which will be included.

ORIGIN AND DEVELOPMENT OF THIS JOURNAL

Frequently questions have been asked concerning the origin of NORTHWEST MEDICINE, how it has developed for nearly forty years, who owns it and controls it. Answers to these questions have been presented on several occasions, but there are constant accessions to the medical profession of those unfamiliar with the matter under discussion. In this issue is published a paper, read during the summer to enlighten inquirers seeking information concerning these journal queries. It is believed this paper may be of interest to the profession of our three states who may thus learn how the journal originated and something of its relations to the profession during its period of existence.

VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter Prize Award of $300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association, which will be held at Boston, Massachusetts, May 26-28, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed 3,000 words in length; must be presented in English; and a typewritten double spaced copy sent to the corresponding secretary, Dr. W. Blair Nosser, 133 Biddle Street, Kane, Pennsylvania, not later than April 1.

ORIGINAL ARTICLES

LESIONS ABOUT SHOULDER JOINT*

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IOWA CITY, IOWA

INTRODUCTION TO SUBDELTOID OR SUBACROMIAL BURSITIS

What was first called periarthritis of the humerus by Duplay in 1872, who gave us a classic description of the clinical pathology of the condition, is now recognized as the complex of various or related pathologic events, occurring in and about the subacromial bursa. The breaking up of this complex into its component pathologic features was principally furthered by Codman's investigations, who called attention to the neighboring structures, particularly the floor of the bursa and adjacent tendons.

The second advance which seems to us of decided importance occurred when Wrede and Brickner, in 1912, found necrobiotic changes taking place in the tendons following tears, with the result that irregular bodies of lime salts were deposited in the tendons. Subsequently, it was found that such injuries to adjacent structures of the bursa, particularly to the supraspinatus tendons, were by no means uncommon and were rather frequent in individuals doing active and laborious work.

The rupture is usually produced in two ways: either by muscular strain, when the shoulder is lifted in abduction, or by direct blow on the shoulder, usually from a fall, with or without accompanying dislocation. And the deposition of lime salts occurs in the necrotic tissue after such a tear. This is not entirely unique as we find deposition of lime salts after tendon tears in similar conditions in the triceps, brachialis anticus, particularly also in the adductors of the femur and extensors of the quadriceps, in all instances following tear of the muscles.

Furthermore, when such a muscle retracts, it enlarges the gap and creates an opening of greater or lesser extent, through which a direct communication between the bursa and the shoulder joint is established.

CLASSIFICATION

On these premises, the lesions about the shoulder joint and about the subacromial and subdeltoid bursae may be classified as follows:

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*Read before the Forty-eighth Annual Meeting of Idaho State Medical Association, Sun Valley, Idaho, September 11-14, 1940.

Lesions of the Bursa Itself. (a). Hypertrophic changes, formation of synovial villi, hygromas, villous enlargements and nictitating folds, thickened walls, a condition responsible for the impaired gliding mechanism of the bursa. (b). Adhesive bursitis with numerous adhesions and bands. (c). Acute and inflammatory exudates, hydrops, empyema of the bursa. (d). Deposit of calcified material in the form of granules within the bursa wall. These generally are surrounded by giant cells and underlie the epithelial lining of the wall.

Primary Injuries to the Tendons or the Musculotendinous Cuff Overlying the Bursa. (a). Tear of the supraspinatus tendon, with or without calcareous deposit in the tendon. (b). Tear of other rotators: infraspinatus tendon, subscapularis and teres minor, with or without deposit of lime salts. (c). Tear or degeneration of the tendon of the biceps.

It should be added that the calcareous deposits, usually situated in the supraspinatus, give distinct roentgen shadows over the head of the humerus. These shadows are separated from the humeral head and have no definite bone structure. They may form disc-like particles, or occur in large plaques, or penetrate the tendons diffusely. The tear or perforation of the tendon may lead to a complete rent in the capsule and thereby cause a communication of the joint with the bursa itself.

Clinical Pathology. According to Codman, the clinical signs of this conditions are pain, restriction of motion and finding of calcified deposits in the supraspinatus tendon.

The pain is either spontaneous on pressure, on motion or radiating. The most common sign is the spontaneous pain, especially at night, and characterized by nocturnal attacks and exacerbations. It almost invariably radiates into the territory of the medial and lateral cutaneous brachii.

Pain on pressure is located along the entire extent of the bursa, but mostly acutely over the midportion of the deltoid, below the acromion process.

Pain on motion is most marked when the arm is moved in a certain direction, i.e., abduction and outward rotation. Pain on motion may disappear when the arm is abducted because the lesion disappears under the acromion and is, therefore, not accessible to palpation (Dawburn's sign).

The patient may be able to abduct the arm passively to the horizontal position without pain, but when he attempts to hold the arm by contraction of the deltoid muscle the pain reappears (Codman's sign).

Radiating pain follows the medial or lateral cutaneous nerves of the arm and not infrequently reaches the elbow.

Interpretation of Pain. Pressure pain at the greater tuberosity corresponds to the insertion of the supraspinatus muscle and indicates that the tendon is involved, and this is found in conjunction with a depression or groove or an eminence at the point of insertion of this muscle, deep under the acromion, and represents the tear. Lime salt deposits in this tendon often produce a painful eminence over the greater tuberosity, and in conjunction with Dawburn's sign the pressure pain is significant for a localized subbursal lesion.

The most important point is finding a tender rotating point which disappears under the acromion with a crepitus, and a painful jog as the arm is abducted. According to Codman, this is not only characteristic of the rupture of the supraspinatus tendon but it is quite unlikely that it appears with any other lesion affecting the shoulder joint.

Limitation of Motion. Motion, as a rule, is always very much restricted and active abduction of the shoulder is almost totally lost. But there is not a complete arrest of motion; usually a slight amount of motion remains, although it may only cover a few degrees. This may be important in distinguishing between subdeltoid bursitis and affections of the shoulder joint itself. In the latter, all motion may be entirely eliminated by spastic muscles and, if so, the arm will be fixed in a position of about 25 to 35 degrees of abduction and slight forward flexion.

Degree of Restriction of Motion. In the adherent type of subdeltoid bursitis, either from injuries or infectious causes, restriction of motion is great, with complete inability to abduct and externally rotate the arm, the so-called "frozen shoulder." In chronic subacromial bursitis, due to hypertrophied villi or hypertrophied bursal sac, without adhesions, there is much less restriction of motion.

In the subbursal tendinous tears there is a selective restriction of motion. According to Codman, the so-called scapulohumeral rhythm is disturbed. The old conception was that the abduction of the arm up to 90 degrees is carried out entirely in the shoulder joint, and is then relieved by movement of the scapula in the sternoclavicular and acromioclavicular articulations. This is erroneous. Scapular and scapulohumeral movements are concomitant, but the ratio of rotation in these two joints increases rapidly with abduction. The sternoclavicular joint rotation increases rapidly as abduction progresses.

Codman found that, when there is a supraspinatus tear, scapular movement accompanies abduction up to horizontal and then disappears, whereas, when the arm is lowered from the perpendicular, scapular movement accompanies the arm to the horizontal and then movement occurs in the humeroscapular articulation alone. This is, of course, a reversal of the normal mechanism. Furthermore, since the supraspinatus is an abductor of the arm subsidiary to the deltoid and since it institutes the abduction, a tear of this muscle will have a great deal to do with this inability to abduct the arm actively at the beginning of abduction. When abduction has reached 20 or 30 degrees, then the deltoid comes into play.

So we see that complete rupture of the supraspinatus muscle is the most frequent of the muscle ruptures in the musculotendinous cuff, giving a more or less characteristic clinical picture. It is not so definite when the tear of the muscle is incomplete, particularly when there are so-called "rim rents" with no communication with the joint. These are probably much more common than the complete ones. Very often we find adhesions in the lower fibers of the tendons, frayed or torn out, and these injuries are often the precursors of lime salt deposits.

Roentgen Finding of Calcified Deposits in the Supraspinatus Tendon. These deposits may penetrate into the bursal sac and may fill it without necessarily producing inflammation of the bursa. It is certain that they occur in the tendon itself first, and then perforate into the bursa in response to trauma. It has already been pointed out that there is a definite tender, circumscribed point located over a groove, and this tender point, just as in the supraspinatus tear, will disappear under the acromion when the arm is abducted. Then abduction proceeds from horizontal to perpendicular; the hitch occurs again when the arm is lowered from the vertical position and approaches the same angle.

OTHER CONDITIONS ABOUT THE SHOULDER JOINT SIMULATING OR RESEMBLING SUBACROMIAL BURSITIS

Tendon Ruptures. Rupture of the Biceps. The biceps tendon is usually well protected from trauma, lying beneath the base of the subdeltoid bursa and beneath the tendinous expansion of the supraspinatus. It takes a very violent trauma to dislodge the biceps tendon from the groove, and such a lesion would involve complete rupture of the capsule of the joint. Occasionally the tendon is found torn from its attachment to the scapula. There is tenderness at the point of rupture in the bicipital groove, and if the tear is complete, there is retraction of the muscle, causing the muscle belly to appear more distally than normal.[1]

Inflammation of the sheath of the biceps may sometimes produce symptoms closely simulating those of inflammation of the subdeltoid bursa. Since all motions of the humerus, whether abduction or external rotation, involve motion of the tendon in its sheath, it may be easily imagined that many of the same symptoms may be produced by inflammation of this sheath as are seen in inflammation of the subacromial bursa.

Rupture of the Other Rotators of the Arm. Other rotators are the infraspinatus and subscapularis. Rupture has been occasionally observed, but is much less frequent. Rupture of the subscapularis causes a definite tender point at the lesser tuberosity. It permits free inward but lacks outward rotation.

Tears of the latissimus dorsi and pectoralis major are liable to cause adduction contracture of the arm, combined with distinct tenderness over the point of insertion of these tendons. The tender points elicited by outward rotation can be strictly located at the inner part of the arm, close to the axillary fold. Very often extensive scars follow the tears so that neuritic symptoms arise in such severity as to completely overshadow the original lesion.

Sprains and Tears of the Shoulder Joint Capsule itself, especially of the inner and anterior portions, deserve particular consideration, when they occur in the wake of a trauma which is not violent enough to produce dislocation of the head. They are usually caused by forced overabduction and outward rotation.

Acromioclavicular Arthritis. A number of cases of this type are reported by Codman. Tenderness is located strictly at the acromioclavicular articulation. There is occasionally subluxation in traumatic cases.

Brachial Neuritis. True brachial neuritis is exceptional but involvement of some branches of the plexus is not infrequent. Diagnosis is made upon the basis of radiation and neuritic signs, territorial distribution and trophic symptoms such as brittleness of the nails, edema and angioneuritic symptoms.

One word must be said about arthritis of the shoulder joint, not only in the light of differential diagnosis but also as a factor in true subacromial bursitis. It has been remarked by Codman the fact that in many cases, in which he operated for rupture of the supraspinatus tendon, he also found a ruptured long head of the biceps. This has been corroborated by other surgeons, especially by Wilson. Therefore, it was concluded that these lesions are not always or not wholly of traumatic origin, but they very often are the result of arthritis. Codman's patients were of a class subject to considerable strain, usually of the laboring type, in whom it is not uncommon to find arthritis precipiated by the severity of work. In a series of instances, Dr. Ackerson's findings on the cadaver were bilateral. It is not infrequent to find calcareous deposits in the tendons bilaterally, which suggests the possibility of an arthritis predisposing to rupture.

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[1] Gilcreest, E. L.: Rupture of Muscles and Tendons, particularly Subcutaneous Rupture of Biceps Flexor Cubiti. J.A.M.A. 84:1819-1822. June 13, 1925.

TREATMENT

Conservative Treatment is by far the routine. Operative treatment is indicated in exceptions only and under very definite indications.

Not to be Operated on

The Bursitis. Acute cases. There is unanimity of opinion that the treatment of acute cases is fixation in splints or plaster casts. Pain is combatted by splints, particularly; also aspirin, bromides, etc.; rest is obtained with arm in abducted position. According to the advice of Brickner, a rest may be fixed to the head of the bed, patient lying in such a position that, as he slides down, the arm goes in abduction and outward rotation.

Spasmodic Cases. When spasm is the chief cause of limitation of motion, the course of treatment is again splinting and gradual stretching. To this group also belong the more acute adhesive cases, where the adhesions are still more or less plastic.

Adhesive Types, Solitary Adhesions. Question of breaking up of solitary adhesions. Although forcible breaking up of adhesions under anesthesia is variously advised, we very much hesitate to recommend the procedure. Gradual stretching is very much to be preferred, even though it does involve a very long protracted aftertreatment.

Cases to be Operated on

Cases with Broad Adhesions, so-called "frozen shoulders," which do not yield to gradual stretching and prolonged aftertreatment, require incision into the bursa and direct division of the adhesions.

Adhesive Bursitis. Section of Adhesions.

Case 1, H. L. Gradual developement, pain spontaneous, local over tuberosities, positive Dawburn sign. Deposit in roentgenogram. General restriction of motion.

Operative findings: Dense adhesions between roof and floor, no definite calcium accummulations. Section of adhesions; full range of motion. End-result excellent; observation five years.

Case 2, L. D. Gradual development. Pain radiating, local over bursa, general limitation of motion. Roentgenogram negative.

Operative findings: Dense adhesions. Section. Full range. End-result fair: range became limited. Adduction contracture.

Case 3, C. G. Traumatic. Pain spontaneous and radiating; tenderness in bicipital groove; limitation of motion general; snapping.

Operative findings: Numerous adhesions, degeneration in biceps tendon. Separation of adhesions. End-result fair: full range, painless, grating and pressure tenderness persisting.

Case 4, R. S. Gradual. Pain spontaneous; tenderness over bursa; limitation of motion general; snapping.

Operative findings: Numerous adhesions between roof and floor. Total resection of bursa. Histology: calcification and hyaline degeneration of bursa. End-result fair: motion limited but painless; observation one year.

Case 5, N. J. Gradual. Pain spontaneous; tenderness over bursa; limitation of rotation; generalized arthritis.

Operative findings: Very dense adhesions, thickened capsule, calcareous deposits, tendon intact. Separation of adhesions. End-result poor: continued pain. Fusion performed later (arthritis).

Case 6, D. S. Gradual. Pain spontaneous; limitation of abduction and rotation.

Operative findings: Adhesions. Separation. End-result good: free, painless motion; observation six months.

Chronic Nonadhesive Bursitis. Another type of lesion requiring operative treatment is the one in which the surface of the bursa is very irregular due to chronic thickening and nictitating folds. These cases are characterized by marked crepitus and jerky motion of the shoulder. An exploratory incision is to be made, the offending irregularities are removed or the entire bursal sac is to be taken out. Thickened folds, small osteophytes or calcareous deposits at the base of the bursa can be properly dealt with.

Case 7, J. S. Traumatic. Pain spontaneous and radiating; tenderness over bursa; limitation of abduction.

Operative findings: Thickened trabeculated bursal walls, erosion of joint cartilage. Closure. End-result poor: arthritis in joint, fusion indicated.

Case 8, D. H. Gradual. Pain spontaneous and radiating; tenderness over shoulder; limitation of motion general.

Operative findings: Thickened walls, some adhesions, cyst in long head of biceps. Removal. End-result very good: no disability; observation one year.

Case 9, H. M. Gradual. Pain spontaneous; tenderness over acromion; no limitation of motion.

Operative findings: Walnut size cyst communicating by narrow stalk with acromioclavicular joint. Resection and closure of capsule. Histology: cyst smooth with mesothelial lined walls; multilocular hygroma. End-result good.

Case 10, O. F. Gradual. Pain spontaneous and radiating; tenderness over bursa; limitation of abduction and external rotation.

Operative findings: Degenerative changes of supraspinatus with partial separation from floor. Excision and repair.

Histology: hyperplastic synovial villi with marked increase in cellular elements; engorgement of capillaries, lymphocytic and mononuclear infiltration, hyalinization. End-result very good: good range, no pain.

Treatment of Tendinous Tears. In contrast to bursitis, tendinous tears are distinctly localized lesions and offer definite mechanical obstacles. Unless they repair themselves spontaneously, the indication is operation. Codman advises an exploratory incision of the deltoid which opens the bursa. This method is suitable for removal of small osteophytes and small calcareous deposits.

But where there is an actual rupture of the supraspinatus tendon, perforation of the capsule or rent, one must go much farther in the approach. Therefore, the larger or so-called sabre cut incision is much to be preferred. Codman begins with an incision two inches long, extending downward from the acromioclavicular joint and stripping the fibers of the deltoid. One must be careful not to extend this incision too far so as not to divide the anterior portion of the circumflex nerve. Then the bursal cavity is entered and with proper retraction and downward pull of the arm one can see well up under the acromion. By rotating the arm the greater and lesser tuberosities with their attached tendons can be brought into view. If a rupture is present, this can be seen as a gap in the capsule, through which the articular cartilage covering the head of the humerus appears. A small rent can be repaired through this incision.

Wilson, in order to repair even greater gaps, uses still a more radical procedure, passing the incision over the acromioclavicular joint and dividing the latter with a knife together with the base of the acromion. This gives a wide exposure of the capsule and tendons overlying the humeral head. The edges of the tendons are seized with forceps and pulled down, at the same time abducting the arm so that the greater tuberosity can be approached. A small channel is cut transversely in the anatomic neck of the humerus to provide a bed for the tendon. In this channel, one-fourth-inch in width and three-fourths to one and one-half inches in length, the tendon of the supraspinatus is placed, drill holes are made to anchor it firmly into the humerus and silk sutures are passed through them which grip the tendon and draw it firmly into its bed. The arm is fixed in abduction of 90 degrees in a splint which is continued; after four weeks, institution of physiotherapy.

Rupture of Supraspinatus

Case 11, A. H. K. Traumatic. Pain spontaneous; radiating; tenderness over greater tuberosity; Dawburn's sign; limitation of motion general; roentgenogram positive for deposit.

Operative findings: Thickened fibrotic walls with large rent in capsule; marked osteoarthritis of the head with fibrillation of cartilage. Repair of rent. End-result good: free motion, though weak active abduction; observation one year.

Case 12, J. M. Trichinosis simulating supraspinatus tear. Traumatic. Pain spontaneous and radiating; tenderness over bursa; limitation of abduction and external rotation.

Operative findings: No pathology in bursa. Histology: trichinosis in deltoid.

Deposit in Injured or Degenerated Supraspinatus Tendon

Case 13, N. Q. R. Traumatic. Pain spontaneous; tenderness of greater tuberosity; Dawburn's sign; roentgenogram positive for deposit.

Operative findings: Calcareous deposit in supraspinatus tendon; no adhesions. Deposit removed. End-result very good: recovery; observation one year.

Case 14, C. H. Gradual. Pain spontaneous; tenderness over bursa; no limitation of motion; roentgenogram positive for deposit.

Operative findings: Calcified deposit in supraspinatus tendon, extending into bursa and capsule, diffuse, in small grains; bursa is thickened and lobulated. Deposit removed. End-result excellent: complete recovery; observation four years.

Case 15, D. K. Gradual. Pain spontaneous; tenderness over bursa; limitation of abduction and rotation; roentgenogram positive for deposit.

Operative findings: Extensive calcium deposit, in granules, in supraspinatus tendon. Removal and repair. End-result excellent: complete recovery; observation two years.

Case 16, E. T. Gradual. Pain spontaneous; tenderness over greater tuberosity; limitation of abduction and external rotation; roentgenogram positive for deposit.

Operative findings: Thickened walls, grayish oily deposit, degenerated supraspinatus tendon. Removal of deposit and repair of tendon. End-result excellent: complete recovery; observation six months.

The after-treatment varies only slightly from that in various conditions constituting scapulohumeral periarthritis. It begins in manipulative cases as soon as the wound is closed; in cases of tendon suture it begins a few weeks after the operation. If the arm is to be brought up by splints, one must see to it that the position of abduction and outward rotation is changed only gradually. If this position has been accomplished by an operation, one must work gradually from the abduction and outward rotation, whereas in conservative cases one works gradually toward complete abduction and outward rotation. We would warn especially against undue haste and ill-timed vigorousness of treatment. Such errors usually betray themselves on the following day by an increase of pain and decrease of motion.

ALLOY WIRE TENSION SUTURES

AS UTILIZED IN ABDOMINAL SURGERY*

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Effective closure of an abdominal incision depends upon several important factors. One considers the physical status of the patient, the problem of infection, the type and extent of the surgical wound and the method of suture. Several matters concerned in satisfactory abdominal closure are constantly under control of the surgeon. Other more or less important factors are often necessarily disregarded.

For instance, a patient is not ordinarily observed for reactions to suture material.[1,2] For various reasons a poorly nourished or obese individual is not always prepared to promote postoperative healing. The bad effects of prolonged physical inactivity, marked obesity and tissue degeneration are not easily nor quickly overcome in preparing even elective surgical cases. However, technical methods of establishing firm wound closure are always subject to precision management. As a matter of fact, careful layer by layer abdominal closure with catgut for peritoneum and fascia has very often served the purpose.

The frequently described use of buried silk[3] or fine rust-resisting wire suture[4] has aroused some new interest, especially since the development of better materials and a revival of emphasis upon the need for gentle, careful technic in application. Our staff has encountered many cases where ordinary layer by layer catgut closure seemed insufficient to avoid the danger of postoperative wound disruption. Such a catastrophe unquestionably increases the surgical risk and definitely raises the morbidity rate.

Surgeons have originated, developed or adopted various types of tension sutures and dressings in their efforts to prevent dehiscence of laparotomy wounds and the consequences. Until 1933 we had tried several well known methods of tension suture. Through and through heavy silk and silkworm stays were included, either as figure-of-eight or simple loops. We had also experimented with suture stays across rectangular wire frames placed about the incision. Large circular buttons and perforated aluminum discs were utilized on a number of occasions, placing several such butresses on each side of the wound and passing heavy sutures through them. Difficulties of one kind or another caused return to simple figure-of-eight silkworm tension sutures, engaging the deeper loop of the suture through fascial edges.

In 1933 Reid et al[5] published their results with through and through silver wire sutures. We followed by granting the method a thorough trial. Adoption led to several modifications, including the use of a soft alloy wire that we obtain at local hardware stores.[6] The wire material is strong, pliable, corrosion-resistant and economical to use for sutures in the manner described by Reid. We found in addition that the preliminary use of long straight transfusion type needles, passed as wire carriers deeply through and across beneath the wound edges simplified the placement of wires. We claim no originality in using tubular needles for suture guides. However, their application to this problem may be new.

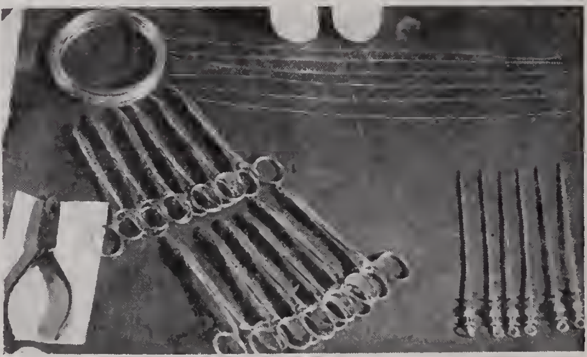

Fig. 1. Instrument set up for use in applying wire tension sutures with aid of tubular straight needles and hemostatic type forceps.

Five and one-half inch by 13 gauge needles of rust-resisting metal are not difficult to obtain since they are manufactured for other common uses[7] (fig. 1). The long tubular needles may be passed through one margin of the incision at a time and the wires inserted separately through each side. Whenever possible, however, the needles are passed transversely across and entirely through both wound margins at once. The number of alloy wires required in any abdominal case is estimated by the extent and location of the incision; also by its character, whether grossly infected or not and by the condition of the abdominal wall. After passing wires the tubular needles are withdrawn and the wires rendered taut beneath and across the wound edges. Hemostatic type forceps[8] temporarily applied to each wire opposite external skin perforations maintain the wound edges in broad approximation. That closes the incision and prevents slipping of viscera beneath the wire loops, while packing of the superficial wound or additional suturing is done.

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*Read before a meeting of Multnomah County Medical Society, Portland, Ore., Oct. 16, 1940.

*U. S. Veterans Administration Facility. Published with permission of the Medical Director, who assumes no responsibility for the opinions expressed or conclusions drawn by the author.

[1] Kraissl, C. J., Kesten, B. M. and Cimiotti, J. G.: Relation of Catgut Sensitivity to Wound Healing, Surg., Gynec. & Obst. 66:628-635, Mar., 1938.

[2] Pickrell, K. L.: Hypersensitivity to Catgut as Factor in Wound Disruption, Bull. Johns Hopkins Hosp. 64:195-206, Mar., 1939.

[3] Nixon, E. A.: Silk Sature Material, Northwest Med. 38:131-133, April, 1939.

[4] Babcock, W. W.: Ligatures and Sutures of Alloy Steel Wire, J. A. M. A., 102:1756, May 26, 1934.

[5] Reid, M. R., Zinniger, M. M. and Merrell, P.: Closure of Abdomen with Through and Through Silver Wire Sutures in Cases of Acute Abdominal Emergencies, Ann. Surg. 98:890-896, Nov., 1933.

[6] "Rival Wire Belt Lacing," No. 0, 50 feet in coil and manufactured by Malin & Co., 2514 Vestry Ave., Cleveland, Ohio, also obtainable on spools.

[7] Termed "Special" needles of hyperchrome steel, rust-resisting, manufactured by Becton-Dickson Co.

Guarding of viscera is easily accomplished by ordinary methods, including finger insertion while drawing up and fixing the wires. We have found the use of a visceral retainer such as that described by McNealy[9] convenient at this stage. Temporary tensing and support of cross wires with forceps renders additional suturing of layers in clean cases very simple, compared to difficulties sometimes encountered during other methods of closure. Thus layer suture may be proceeded with after insertion of wires according to the judgment of the surgeon. Closure of the skin incision may be accomplished by usual suture if considered advisable. The free ends of wires are twisted in pairs over a narrow plain or treated gauze dressing.

Some awkwardness in accomplishing skin or anterior fascial closure will be experienced, depending upon the adjustment of forcep tension on the transverse wires. Superficial wound edges roll out as wires are temporarily drawn up and clamped. Further adjustment of tension during supplemental suture relieves that situation readily. Removal of forceps after layer sutures are placed and after securely twisting the wire ends usually results in satisfactory skin edge contact. The metal loops tend to flatten and become ovoid, thus reducing eversion.

What might be termed segmental closure of a wound may be employed in difficult cases. Then one or more adjacent strands instead of all cross wires are tensed with the aid of stop clamps as described above. The approximated segment of the wound can be firmly and completely sutured by layers before proceeding to the next segment, even to twisting of taut wires over a part of the dressing. Protection of viscera is very easily accomplished in such cases through the open portion of the incision. Remaining segments are similarly managed.

In frankly infected wounds or where extreme haste seems essential, transverse interrupted wire closure without additional sutures, as described by Reid, is adequate for firm healing. In such instances postoperative management is usually simple because drainage is facilitated and wound abscess formation may be entirely eliminated. In such simple, interrupted wire closures, wound edges superficial to the peritoneum are most often held apart by gauze packing placed prior to twisting the wires in pairs across the surface of the incision. Postoperative dressings are managed without danger of evisceration. The tension of wire loops may be adjusted during dressings from time to time, in any case (fig. 2).

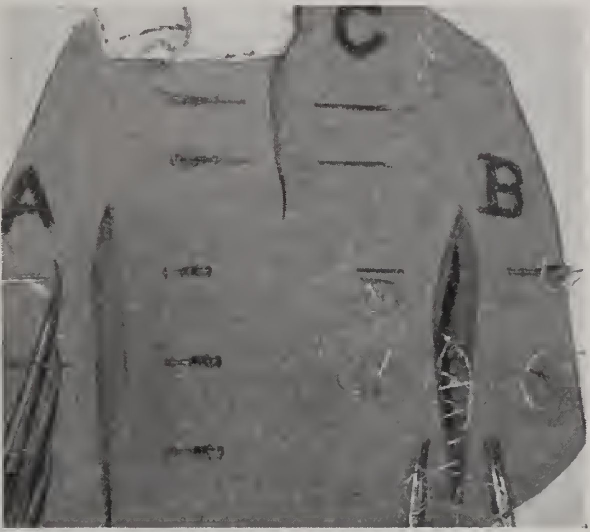

Fig. 2. Details of insertion, interrupted wire tension sutures: A. Rapid method of simple wound closure. All needles in place and forceps applied prior to passage of alloy wires. B. Illustrates usual steps in placing of wires, including temporary fixation with aid of forceps and beginning supplemental suture. Needles may be passed through one margin of wound at a time. C. Segmental closure of wound, including start of gauze pack. Supplemental suture when used precedes placing of gauze and twisting of wire pairs.

Wires remain in situ for varying periods of time, depending upon circumstances. Usually they are kept in place about fifteen days, occasionally longer, up to three weeks, when cachexia or profuse drainage exists. As a rule, they are allowed to remain in badly infected cases until laxness indicates loss of effective action. At that stage stiffness and fixation of wound edges prevent separation. Leaving loose wires in place for several days past obvious usefulness does no apparent harm and seems good practice. One is then reasonably certain that wound fixation is satisfactory. In many infected cases granulation of the narrow trough between wound edges progresses rapidly, since there are no subfascial pockets or healed overlying skin to hinder. Even in the presence of enterostomy or fistulous openings firm scar structure progresses to the site of such openings.

Our clinic has employed interrupted transverse wire sutures of the described through and through type in approximately two hundred and fifty selected abdominal cases during the past six or more years. Some incisions were vertically placed through the rectus muscles. Others were of the midline or paramedian type. Some were at the outer borders of the rectus muscles. High and low incisions were included. Oblique incisions where wound disruption was feared were also included. An occasional large muscle split incision was reinforced with wires, though ordinarily the method was not considered essential.

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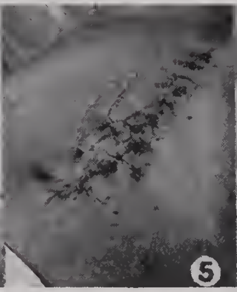
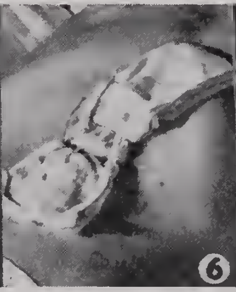
[8] We use older hemostats of the curved Crile or Kelly type set aside in a glass jar together with a coil of wire, several hollow needles, and a pair of mechanic's wire cutters of small size. The jar contents are kept sterile for emergency or routine use.

[9] McNealy, R. W.: Viscera Retainer, J. A. M. A. 105: 1759-1760, Nov. 30, 1935.

A variety of indications have been accepted for use of tension wires. Preceding infection, gross contamination, marked obesity, cachexia and debilitation constitute frequent reasons for use of wires. Also, unrelaxed abdomens have been securely and satisfactorily closed without undue manipulation of viscera or trauma. Absence of sufficient relaxation to enable ordinary closure may arouse curiosity as to reasons while operating during modern conditions. We do occasionally encounter taut abdomens and have witnessed other surgeons trying to close gaping incisions under supposedly ideal circumstances. That situation presents a not infrequent problem and in our experience it has been managed best from the surgeon's point of view with the aid of wire tension sutures.

Figs. 3, 4. Wound result after three laparotomies during approximately one month. Wire tension used each time.





Figs. 5, 6. Wire tension sutures with treated gauze over sutured wound at approximately ten days postoperatively. Also following removal of gauze.

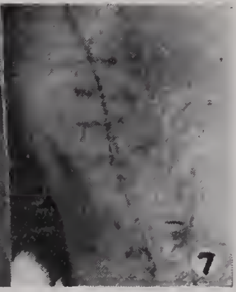


Fig. 7. Healed wound after cholecystogastrostomy in jaundiced patient after about one month.

CASE REPORTS

Case 1, is a fairly recent case in which the patient, seriously weakened by the results of prolonged pyloric obstruction following duodenal ulcer, underwent three short spaced operations through the same upper abdominal wound. It is representative of the good results obtained in similar instances.

Careful, adequate preparation of the patient was followed by the first surgical operation and a so-called short loop posterior gastroenterostomy was done. Approximately ten days later high obstruction occurred and did not respond to nonoperative treatment. Reopening of the abdomen and a plastic procedure about the stoma were done without serious delay. Relief was effected for a few days, after which high obstruction again occurred. The patient became extremely weak and emaciated, regardless of efforts to maintain strength. Glucose and average citrated blood transfusions were not sufficient to maintain nourishment A third operation was then done, again through the primary incision, and an anterior gastroenterostomy accomplished. The patient's condition precluded further extensive surgery about the posterior stoma.

Rapid dramatic improvement followed the third operation. The obstruction was definitely overcome. The twice reopened upper abdominal wound healed uneventfully. Tension wires were used each time. The appearance and condition of the incision about three weeks after the third operation was very satisfactory. Four weeks postoperatively the patient was up and about with the wound fully healed and apparently solid (figs. 3, 4).

Case 2, is another fairly recent case in which the patient, afflicted with tertiary syphilis, had experienced repeated massive gastrointestinal hemorrhages. He was prepared and finally considered ready to undergo surgery for relief of pyloric obstruction and, of course, to investigate the source of recurrent bleeding. He was not a good risk because of debilitation, considerable anemia and manifestations of advanced tertiary syphilis. The differential diagnosis concerning gastrointestinal pathology was not very clear after careful preoperative study.

At operation an apparent inflammatory mass between the proximal duodenum and liver was encountered. His condition during surgery did not allow extensive investigation. A posterior gastroenterostomy was done to relieve the obstruction, followed by abdominal layer closure including through and through tension wires. Two weeks later the wound appeared satisfactory. Treated gauze beneath the wire loops was found grossly clean. Skin sutures were intact (figs. 5, 6).

Case 3, illustrates the use of wire tension sutures in jaundice, especially where malignancy is a factor. A middle-aged patient, markedly icteric, and with a diagnosis of probable tumor involving the pancreas, was surgically explored and a palliative cholecystogastrostomy accomplished. Approximately four weeks later all sutures including cross wire tension strands had been removed. An apparent firm wound healing was obtained (fig. 7).

Limited follow-up in our series has been facilitated to a considerable degree by a need for retaining severe nonservice chronic cases in hospital or domiciliary departments during prolonged treatment. Out patient facilities are limited generally to war service cases. Opportunity to review surgical results in house cases after several weeks or in some instances after several months is thus afforded. Readmissions to hospital and scheduling of patients for routine pension examinations likewise create opportunities for incidental recheck of surgical results.

It is customary for many beneficiaries to voluntarily return for examination and advice, whenever an old condition becomes troublesome. It is not simple for them to obtain attention elsewhere than the original source of treatment unless they move away from the region and apply to other Veterans Facilities. Under such circumstances many of the two hundred and fifty cases in which wire tension sutures were utilized are reexamined at intervals by some member of our medical staff. In only one patient thus examined has hernia been demonstrated. The case, an abdominoperineal resection for malignant tumor, broke down in the abdominal scar with resultant hernia two years after operation and after having gained 60 pounds in the preceding six months. I have occasionally felt small defects approximating the diameter of a silver dime at sites of drainage in otherwise solidly healed scars. No bulging through small defects has been noted. The usual findings are in contrast to the huge incisional hernias frequently seen soon after postoperative wound disruption or dehiscence.

We have encountered some medical opinion against the use of through and through wire sutures for tension purposes. Usually the objections have been based upon relatively minor or theoretical, and even upon esthetic grounds. Patients are not unduly uncomfortable after operation, unless, as in some instances, the wire loops have been drawn up too much. Vigorous snug looping of wires, as though one were tightly lashing together inanimate objects, is always a source of discomfort and pain.

SUMMARY

Through and through transverse wire tension sutures have been employed in approximately two hundred and fifty selected abdominal operative cases during a period of six years. The application of such tension wires has been generally effective in preventing postoperative wound disruption and incisional hernia.

A method of utilizing commercial alloy wire with the aid of long No. 13 gauge tubular needles is described. Undesirable wound reactions have not occurred in the presence of alloy wire sutures.

Postoperative management of obese, debilitated or infected cases is simplified and sound abdominal scars remain. Such weakened patients require more than the immediate mechanical security of wound fixation by absorbable layer sutures.

Abdominal binders and undesirable enforced immobility of patients are not sufficient adjuncts to the use of absorbable sutures and may interfere seriously with other indicated therapeutic measures.

INDICATION FOR VAGINAL HYSTERECTOMY

IN TREATMENT OF GYNECOLOGIC CONDITIONS

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In reviewing recent literature one finds a growing tendency among gynecologists to be more radical in removal of a diseased uterus. This increased tendency toward total hysterectomy has not been entirely generated by fear of carcinoma developing later in the unremoved cervix, but by realization of the fact that a diseased cervix, which is the source of local symptoms such as leukorrhea, pelvic pain or discomfort and dyspareunia, can also have a marked effect on the general well being of the patient.

While these principles in surgical management of pelvic disease are more or less in universal acceptance by gynecologists and general surgeons, there is still quite a lack of harmony as to the most ideal method of surgical approach in their management. Some surgeons believe vaginal hysterectomy has not been receiving the attention it deserves and are not limited in their enthusiasm to surgery of the uterus alone, but advocate the vaginal approach in the removal of diseased ovaries, tubes and even the appendix.

Babcock[1] of Temple University states that for many years he has used this approach in operating for ectopic pregnancy, that he has also morcellated and removed solid tumors of the ovary, and removed fibroids so large they extended well above the navel. In a large series of cases he claims a mortality of one-half of one per cent and feels sure this could not have been equalled by employing the abdominal route. Pryor,[2] Price and Kennedy[3] report large series of vaginal hysterectomies with no deaths, and Pryor, in 1903, goes so far as to state it is an operation without a mortality. These surgeons, I believe, we may classify in the more enthusiastic group of vaginal hysterectomists.

In the more conservative group of surgeons, Richardson[4] of Johns Hopkins Hospital stresses the rarity with which normal uterine cervices are found in conjunction with benign pathology of the uterine corpus, requiring ablation, and for this reason believes subtotal hysterectomy by the abdominal route has today only a limited field of application. Therefore, he advocates a complete mastery of technic of both vaginal and abdominal routes on the part of the surgeon, as neither of these routes is best suited to all cases requiring hysterectomy.

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[1] Babcock, W. W.: Technic for Vaginal Hysterectomy, Surg., Gynec. & Obst., 54:193-199, Feb., 1932.

[2] Pryor, W. R.: Gynecology, Hagerstown, M., p. 262, 1903.

[3] Kennedy, J. W.: Vaginal Hysterectomy and Its Indications, Am. J. Obst. & Gynec., 13:506-511, April, 1927.

[4] Richardson, E. H.: Total Hysterectomy by Abdominal Versus Vaginal Route in Benign Uterine Disease, Am. J. Obst. & Gynec., 32:641-647, Oct., 1936.

Where the status of the pelvic floor and supporting structures permits, he favors the vaginal route in the aged, the infirm and obese because the operation is better tolerated. In removal of uncomplicated fibroid tumors, not larger than a two months pregnancy in conjunction with benign disease of the uterine cervix, he also favors the vaginal route. Likewise in conjunction with the cure of various types of vaginal hernia such as large cystocele, rectocele, enterocele and varying degrees of uterine prolapse at or near the end of the child-bearing period his operation of choice is vaginal hysterectomy followed by hernia repair.

In nulliparous women, whose intrapelvic ligamentous and fascial supports of the reproductive vesical and rectal units are normal and adequate, he prefers the abdominal route. Likewise, where pelvic adhesions, suspected intraabdominal malignancy or other conditions requiring thorough abdominal exploration or incision are present, the abdominal route is his operation of choice. He states that comparison of mortality statistics reveals no disparity between the abdominal and vaginal routes, but that the actual incidence of complication as well as the extent and duration of morbidity are the all-important factors to be considered.

From such observations Richardson is impressed with the fact that in properly selected cases a skillfully executed total hysterectomy by the vaginal route is a decidedly less formidable procedure as determined by its demonstrable effects upon the patient, than is the same operation performed with equal finesse by the abdominal route. On the other hand, an attempt to broaden the scope of the vaginal operation beyond reasonable limits makes of it a mutilating procedure which serves only to discredit it and denotes neither sound judgment nor safe surgery.

The principles of surgery set forth by this essayist, it would seem to me, are safe and sound, and I think most surgeons would agree are a conservative presentation on the indications for vaginal hysterectomy. My discussion of this subject would, however, not be complete without setting forth some of the views of the surgeon who does not consider the vaginal route necessary or prudent in any field of pelvic surgery.

Graves,[5] after years of vast experience and conscientious work, made the following statement in his standard work on gynecology in his fourth edition. "Compared with a properly executed abdominal hysterectomy the removal of the uterus by the vaginal route had no advantages and the vaginal hysterectomy could not be done more rapidly, and there was no less shock or loss of blood than there was when done abdominally." He did not even catalogue the advantages of the abdominal route but gave a brief description of his operation of choice, and with this he dismissed the subject.

Larkin,[6] in discussing a recent paper on vaginal hysterectomy by Eastman,[7] gives us the impression that there is only a limited field for the vaginal route. He favors the abdominal route because (1) it is a procedure which is standardized, and is more readily executed by the average surgeon, (2) it is a procedure which gives a very low mortality rate, (3) the abdominal incision permits better view of pelvic pathology, (4) few serious complications follow this procedure, (5) it gives a surgeon latitude when a mistaken diagnosis has been made, (6) it allows easy removal of pathologic adnexa and the appendix.

Thus we find a wide divergence of opinions among gynecologists and general surgeons as to the operation of choice in treatment of pelvic conditions necessitating removal of the uterus. The arguments presented both for and against both the abdominal and vaginal routes are probably sound in some instances, but to say they are sound in all instances and under all conditions is comparable to advocating that the shoe salesman fit the same last of shoe to every foot. Just as the choice of operation in obstetric complications varies with the descent of the fetus and the stage of labor, so should the choice of type of hysterectomy vary, depending on descent of the uterus toward or through the pelvic outlet together with the necessity of corrective measures of the pelvic outlet itself. Furthermore, why do multiple operative procedures to correct a condition which can more efficiently be done by a single operation with less shock to the patient and less danger of later complications? Having had two cases of epithelioma develop in cervical stumps following previous subtotal abdominal hysterectomy in recent years, and also having had to remove two more for intractable leukorrhea and bleeding, it gives me a feeling of greater security now, when pelvic conditions permit, to remove the uterus in toto by the vaginal route.

The more conservative surgeon might say "why not cauterize or do a cervical plastic or amputation prior to hysterectomy?" In all four of my cases a previous cervical plastic had been done, and yet the late complications ensued. I was much interested in reading a recent presentation by Goodall[8] on "Total versus Subtotal Hysterectomy." He states that in his experience amputation through a diseased cervical mucosa constitutes a real danger from later complications. He attributes the three to one incidence of thrombophlebitis in his subtotal hysterectomies as compared to his total hysterectomies as being due to this fact. He says this mucosal menace can be eliminated by cautery only if it is a true endocervicitis and limited to the mucosa alone. If the organism has already invaded the deeper structures of the cervix, producing a large hard cystic cervix or true cervicitis, cautery is worse than useless unless the cauterization is very deep and destructive. The ideal remedy, he states, is total removal of the uterus.

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[5] Graves, W. P.: Gynecology, Fourth Ed., p. 861. W. B. Saunders Co., Philadelphia, 1928.

[6] Larkin, C L.: Vaginal Hysterectomy, Discussion, New England J. Med., 212:89-90, Pan. 17, 1935.

[7] Eastman, O. N.: Vaginal Hysterectomy, New England J. Med., 212:87-89, Jan. 17, 1935.

RESULTS

It is my desire at this time to report my results in a small series of vaginal hysterectomies performed during the last fifteen years. Of this series, comprising fifty cases, one hundred per cent were multiparae, the youngest being thirty, the oldest seventy-seven years of age. There were twelve cases each in the third, fourth and fifth decades of life, eleven in the sixth and three in the seventh. In three cases of the third decade sterilization had been requested by both husband and wife, and this fact entered into the choice of the operative procedure in these.

In this series there were two deaths or a mortality of 4 per cent. In ten cases complications ensued, or a morbidity of 20 per cent for the series. Highest maximum postoperative temperature was 103.2°, lowest 99.2°. Average temperature for the series was 100.8°.

The longest period of hospitalization was thirty-nine days, shortest ten days. Average hospital stay, fifteen days.

Of the ten cases developing complications there were four of acute postoperative cystitis. Phlebitis of the left leg occurred twice, bronchial pneumonia in two cases, pleurisy once, infection in suture line of broad ligament twice, stitch abscess in perineal repair twice with rectovaginal fistula later in one. In this case there had been contamination through a break in nursing technic. Fistula was later repaired with good result.

The pathologist reported a pathologic cervix in one hundred per cent of the cases. Most common lesions in their order of frequency were chronic cystic cervicitis, lacerations, erosions and nabothian cysts. There were two cases of epithelioma, one early and one moderately advanced. The early case was a lesion on the posterior lip the size of a lentil. This patient is still living and well, fifteen years postoperatively. The other case was the size of a small English walnut in a second degree prolapsed uterus. Last report, four years postoperatively, was still living and well. This has not been reported since 1931, because could not be reached. Both cases were given postoperative roentgenization.

The most common lesion reported in the uterine corpus by the pathologist was a fibrotic uterus with multiple fibroids. In many of these the fibroids were small and intramural and had not been suspected until reported by the pathologist. The largest fibroid was the size of a hen's egg. No fibroids large enough to require morcellation were attempted by the vaginal route. One case with multiple pedunculated fibroids on a long stalk and sagging deeply against rectal wall was erroneously diagnosed a rectal tumor prior to vaginal hysterectomy.

The next most common lesions reported were endometrial changes, polypoid, simple hypertrophy and varying degrees of endometritis. In one case an old gonorrheal endometritis had kept up a persistent leukorrheal discharge for eight years in spite of two previous operative procedures, entailing removal of the pelvic adnexa and part of the cervix.

There was only one case of malignancy of the corpus and this was not diagnosed prior to operation. Upon opening the anterior cul-de-sac, a malignancy of the corpus invading the broad ligaments on both sides was suspected and the vaginal route was abandoned at this stage. A low median incision was made and a radical removal of the uterus and adnexa was completed from above, after correction of cystocele and rectocele from below. The tumor proved to be a grade two adenocarcinoma, developing in a teratomatous tumor of the uterus. In spite of thorough postoperative radiation the patient returned a year later with palpable glandular metastasis in the right retrocolic and left supraclavicular glands.

A few of the uteri removed showed no pathologic changes, aside from atrophic senile changes, and were removed solely to facilitate correction of the procidentia.

In this series of cases there had been fifteen previous corrective operative procedures, with only temporary relief of symptoms. The operative procedures were as follows: one cautery for erosion and perineorrhaphy; three perineorrhaphies; one ventral fixation; three internal suspensions; one internal suspension and perinneorrhaphy; two dilatation, curettage and perineorrhaphy; one dilatation, curettage, perineorrhaphy and internal suspension; two low amputations of cervix and perineorrhaphy; one perineorrhaphy and bilateral salpyngectomy.

There was some degree of uterine prolapse, cystocele and relaxation of the perineum in 100 per cent of the cases. Grades one and two predominated. One case had in addition to complete uterine prolapse a complete herniation of the vagina, forming a sac the size of a small coconut into which the uterus, two feet of the ileum and part of the bladder had herniated. There were calluses on each side of the sac from friction of the thighs. A resection of the vagina and complete closure of the vaginal orifice was advised but refused by the patient. A Kocher operation, splitting the uterus and burying it in the anterior abdominal wall, was then done, followed by high perineorrhaphy. One year later the goose neck cervix stretched still further and partial recurrence resulted. A high amputation of the goose neck cervix was then done, followed by vaginal closure which resulted in a cure.

In another large vaginal hernia and goose neck cervix, in which a previous ventral fixation had been done, vaginal hysterectomy was not performed, owing to the age of the patient and to partially ankylosed hip joints from an old arthritis making exposure difficult. Here, also, high amputation of the goose neck cervix followed by vaginal closure resulted in full relief.

In one other case, early epithelioma of the cervix, it was found that the uterus had a high attachment in a deep pelvis and it was considered safer and better to complete the operative procedure by the abdominal route. Thus, there were four cases in which for good reasons vaginal hysterectomy was not completed by the vaginal route. In all of these recovery was uneventful in spite of the dual procedure. In no case was vaginal hysterectomy attempted unless a first degree prolapse with relaxation of the perineum was present.

The operative procedure was the same in every case aside

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8. Goodall, J. R.: Total Versus Subtotal Hysterectomy, Am. J. Obst. & Gynec., 32:628-640, Oct., 1936.

from the four mentioned above, the technic as devised by Charles Mayo being used. Indwelling catheters postoperatively and iodoform gauze wicks as peritoneal drains were used routinely. The iodoform gauze wicks were removed forty-eight hours postoperatively and the indwelling catheters on the fifth day.

The two deaths were in women of ages fifty-five and thirty-one respectively. The former was an obese woman with hypertension and impaired kidney function, and had a bleeding fibroid in a third degree prolapsed uterus with large cystocele. In spite of thorough postoperative preparation over a period of two weeks hospitalization with dieting and elimination, she died on the tenth postoperative day from uremia. The other death took place on the third postoperative day from what appeared to be a cerebral thrombosis, rapidly progressive left sided paralysis with semicoma and restlessness.

The most common presenting complaint in this series of cases was backache and leukorrhea, next in frequency being urinary disturbance varying from vesical irritability to different degrees of urinary dysfunction in the more advanced cases of prolapse. Dysmenorrhea was next in frequency, together with pelvic discomfort, abnormal bleeding, protusion in perineum and in advanced cases chafing and genital irritation.

To date there has been no recurrence of these complaints in any of the 90 per cent of cases which I have been able to trace during their postoperative period. One case returned with a leukorrhea three years postoperatively. This was found to be a trichomonas vaginalis infection and had no relationship to the condition previously treated.

I can safely say that some of the most grateful patients I have are those on whom I have performed vaginal hysterectomies for relief of one of these gynecologic conditions; grateful, not only to be relieved of the gynecologic complaint, but also to be assured that they need have no fear of carcinoma later developing in an organ which is the commonest site of cancer in the female.

CONCLUSIONS

1. Vaginal hysterectomy has a valuable place in gynecologic surgery as a procedure offering many advantages in selected cases.

2. Like any other operative procedure, however, it has its indications and contraindications. I cannot share the enthusiasm of the surgeon who extends its usefulness to all surgical conditions of the pelvic cavity to the exclusion of the abdominal route which in some cases certainly is superior and far safer in the average surgeon's hands.

3. When its use is limited to the correction of various stages of uterine prolapse of moderate sized uterus in conjunction with reparative procedures of the pelvic outlet in women at the end of the child bearing period, the operation is safe, sound and a boon to the patient and surgeon alike.

4. Extended beyond this sphere, it may needlessly endanger the life of the patient as well as reflect discredit on the ability of the surgeon.

SKI INJURIES AT SUN VALLEY

DISCUSSION OF CAUSES, UNUSUAL TYPE OF FRACTURE AND TREATMENT

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In view of the fact that skiing is assuming a major role in the field of sport and is becoming more and more popular in the United States, we as physicians are becoming acquainted with its hazards and the character of the injuries received. Just as the automobile brought us the "Ford fracture" and other injuries, so skiing has brought us injuries that are somewhat different from those encountered in usual practice.

Our American youth, and some who are not so young, are characteristically reckless and apt to rush into any sport without proper preparation, regardless of consequences. This tendency is not conducive to safety and has resulted in a larger number of accidents than might obtain, if these enthusiasts would more properly prepare themselves for the sport. It is really surprising that there are not more injuries when you consider the number of skiers, the larger portion of whom have had no instruction, are not physically fit for the strenuous sport, and many of whom have inferior equipment.

It is my belief that many of these injuries can be prevented by stressing proper instruction, physical fitness, good equipment, and above all, a sane realization that skiing is a comparatively new sport to us and we must learn it from the "ground up." In the last season at Sun Valley, I attended one hnudred and forty-two injuries. I will endeavor to list some of the contributing causes as indicated by the histories of the accidents.

Instruction. Over half of those injured had not received regular instructions, and were doing maneuvers before they were ready for them. I found the instructors at Sun Valley well versed in first aid, the principles of safety first, and very conscientious in their efforts to teach the proper fundamentals of skiing, the main difficulty being the pupil's tendency to try something on his own before he was ready for it.

Physical Fitness. Many from sedentary lives come to this high altitude and plunge into this sport before they have developed adequate musculature and stamina to properly control their skis. They are apt to persist in skiing even when on point of exhaustion, when their muscles are so tired and their reaction time so slow that they fail to properly react to the demand.

The skiing day for the majority began at 10 a.m. and ended about 5 p.m. with time out for lunch. In the 142 injuries here listed the accidents occurred at the following designated time:

10 to 11	11 to 12	12 to 1	1 to 2	2 to 3	3 to 4	4 to 5
4	24	12	18	21	37	26

Many were out skiing before 10 a.m. but no injuries were received before that time, and only 4 were received up to 11 a.m. Between 11 and 12, or the last hour before lunch, there were 24. From 12 to 1, when the majority were at lunch, there were 12; from 1 to 2 there were 18; from 2 to 3 there were 21; from 3 to 4 there were 37; and from 4 to 5 there were 26. In other words, there were six times as many accidents in the last hour of the morning session as in the time preceding this hour, and about twice as many in the last two hours of the afternoon as in the preceding two hours, in spite of the fact that not many continued skiing after 4 p.m.

In eight specific instances the patient made the statement that he or she was making the last trip down when the accident occurred. The above figures would seem to indicate that injuries are more apt to occur when the skier is tired.

Equipment. There were six instances where the accident was due directly to broken equipment; two cases of feet fracture where the shoes were too large and too flexible.

Weather. In fifteen cases the patient remarked that the accident was due to weather; poor visibility, new loose snow or break in snow crust.

Previous Injury. Six cases reported a previous injury of the part, such as a weak knee or sprained ankle.

Admitted Carelessness. In this class there were three collisions resulting in injury.

TYPES OF FRACTURE AND BONES INVOLVED

In the 142 accidents there were 44 fractures as follows: thumb 7, Colles 1, elbow 2, clavicle 1, scapula 1, leg 4, foot 2, ankle 17.

It is my intention to describe only those involving the ankle, for these fractures are typical, practically the same in every case, and so unusual that I have called them "ski fractures." The patients say that the point of the ski turned out, and then as they fell forward the ski point caught in the snow, and as they continued falling down the hill, the ankle was forcibly extended and at the same time twisted outward. In the usual Potts fracture there is weight bearing with eversion of the foot. In the ski fracture there is no weight bearing, but there is a decided torsion or twist with the foot somewhat extended. The patient usually admits that the knees were not bent at the time. When the patient falls in this manner, there is usually either a severe sprain of the knee or a ski fracture.

On examination one notices a swelling beginning usually in front of the fibula, just above the ankle joint, with crepitus and motion of lower end of the fibula. Usually one can demonstrate some widening of the mortice, but there were no cases with anterior or posterior dislocation of the tibia on the astragulus. The roentgenogram shows a fracture of the lower extremity of the fibula with more or less displacement of the fragment. The fracture line is nearly always spiral and oblique, running from about one-half inch above the joint, from posterior surface forward to the front of the lower end of the fibula. The upper end of the fragment has a tendency to be displaced posteriorly and the whole fragment is displaced outward, resulting in a widening of the internal sulcus and tearing of the ligament.

The external malleolus is lower than the internal, and is more readily affected by torsion, especially with the foot extended. When the foot is extended, the posterior part of the ankle is held more securely by the lipping of the tibia and anterior dislocation of the tibia does not easily occur, but the anterior part of the astragulus turns out against the lower end of the fibula probably a little posterior to the usual point of pressure, and the rigid bone gives way, resulting in the spiral, oblique line of fracture. Sometimes the external lateral ligament ruptures and in these cases the fragment does not come into position with inversion of the foot, and if it cannot be pushed into position and held there by moulded plaster, it may be necessary to do an open reduction and fixation.

Speed described a similar fracture as occurring because of a slower acting torsion with eversion from body weight. However, it is not quite the same in that the line of fracture in the ski fracture runs obliquely through the lower extremity of the malleolus, emerging at the very bottom of the bone, a little in front of the midline.

It is a true malleolar fracture, occurring below the insertion of the tibiofibular ligament and the joint is opened, subjecting the patient to the dangers of callus formation in the joint and subsequent arthritis.

Treatment in all of these cases was immediate reduction under novocain, and a modified Stinson moulded plaster paris splint was applied, the splint being carefully moulded behind the malleolus in order to hold the fragment in place. The foot was held inverted moderately while the plaster set. Due to the fact that these patients insist on being up and about, the splints were reinforced around the foot and at the top by a few turns of circular plaster paris bandage, and then split to allow for swelling. The cases that remained longer than a week after injury were fitted with a new cast and walking iron.

The following questionnaire was sent to all cases of ski fracture by Dr. John Moritz and he received answers to thirteen of them, while I received replies to the remaining four.

1 How many weeks was the injured ankle in a cast? Average time 6½ weeks.
2 How many weeks after cast was removed before you could bear weight without supplementary support? Average time 2½ weeks.
3 Are you now conscious of any difference in the two ankles? .... Yes 3; no 14.
4 Is there any swelling now in the injured ankle as compared with the opposite side? .... Yes 4; no 13.
5 Is there any restriction of motion in the injured ankle? .... Slight 2; none 15.
6 Is the injured ankle any weaker than the opposite ankle, ... Yes 3; no 14.
7 Is there any pain at the site of injury now? Slight 2; none 15.
8 Does the weather change effect sensation at the site of injury? .... Slight 2; yes 5; no 10.
9 Is there as much stability and security in the injured ankle as there is in the opposite ankle? .... No 2; yes 15.
10 Do you favor the injured ankle in any way? No 2; yes 15.
11 Has there been any subsequent injury to the fractured ankle? .... Slight sprain 1; none 16.

CONCLUSIONS

The history of fracture of the ankle demonstrates what happens when the individual does not follow instructions. The ski point will not be apt to turn out, if the knees are bent, for the increased leverage on the ski will more properly control it. The importance of proper equipment is obvious, as is also physical fitness, and thorough instruction in fundamentals.

The common fracture is unique, in that the internal malleolus was not broken in any case, and the line of fracture was lower on the fibula than in the usual Potts fracture.

While it seems that all of these cases ultimately obtained a good result, the fact remains that this type of fracture is more serious than one would suspect from looking at the roentgenogram and examining the joint.

CORACOCLAVICULAR JOINT

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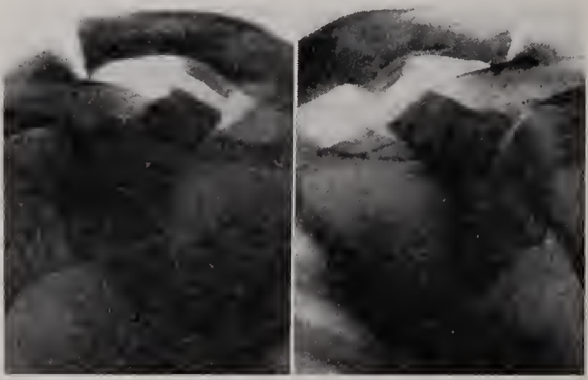
Coracoclavicular joint is an anatomic rarity. The normal S-shaped clavicle is fixed to the coracoid process by the coracoclavicular ligament which is composed of two portions, the conoid and the trapezoid. The conoid ligament runs from the tip of the acromion to the conoid tubercle of the clavicle which is located near the angle at the junction of the middle and outer thirds. In the region of the conoid ligament, bony projections occasionally arise from the clavicle and acromion to form an articulation. I believe this to be a true diarthodial joint with a cartilage covered articular surface and joint capsule. The etiology is believed to be a congenital variation as suggested by Gowland, rather than a traumatic sequela as postulated by Lane. To date only sixteen cases have been reported, ten of which were proven anatomically and six by roentgenogram. To this I add a bilateral case proven by roentgenogram, which is notable because of the rather marked development of both the clavicular and coracoid elements of the joint.



Roentgenogram shows abnormality on right and left coracoclavicular joints.

CASE REPORTS

The patient, a 45-year-old negro male, was first seen on November 13, 1939, with a bruise over the left deltoid region. Past history revealed an old fracture of the left humerus but no complaints directed toward the shoulder.

Roentgenograms were taken, revealing bilateral coracoclavicular joints. The tip of the coracoid process is flattened at the point of attachment of the conoid and trapezoid ligaments, and a flattened projection is seen arising from the lower surface of the clavicle in region of the conoid tubercle. The interval between these two eminences forms a joint space.

CONCLUSION

Coracoclavicular joint is a rare congenital abnormality, the present case being the seventeenth on record.

FUNGUS ALLERGIES*

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At first looked upon as a fad, the hobby of a few enthusiasts, now after thirty years of clinical work, intensive research and innumerable splendid results, allergy has established itself as an important branch of internal medicine. When only a few years ago the problem of fungus allergy was introduced, the few men studying this newly recognized allergen were also looked upon as eccentrics. However, gradually more and more workers in this field have given their attention to the new problem and contributed their share to our present knowledge of fungus allergy.

Really it is remarkable that the importance of mold spores as allergens was not sooner generally accepted. There are so many cases of unquestionable atmospheric allergy which do not fit into the picture of pollinosis nor dust sensitization. Searching for evidence of possible offending agents in the air, we overlooked the fact that pollen plates very often show a generous sprinkling of different fungus spores. Dishes filled with a medium suitable for fungus growth, when exposed to the air for a few minutes, are within four to five days covered with a prolific growth of various molds and yeasts. If we consider that mold spores are proteins, that they are germinal cells, which means that they are apt to be very potent allergens as other germinal cells like pollens, grains, legumes, eggs, berries or nuts, we wonder why their importance as a cause of allergic disorders had not been realized at a much earlier date.

It is true that Blakeley, the English physician, who in 1868 first recognized pollen as a cause of hay fever, also believed that fungus spores might cause similar disorders. In his book on hay fever, published in 1872, he mentions this briefly. No attention was paid to Blakeley's statement concerning the role of fungi in hay fever and asthma until 1924, when Van Leeuwen of Holland recognized mold spores as an important allergenic factor. Hansen in 1928, Hopkins, Benham and Kesten[1] in 1930 published case reports of fungus allergies. Again not much was done about it until a year ago, when the interest of American allergists in this matter arose and Feinberg[2] of Chicago, Brown[3] and Bernton[4] of Washington, D.C., Kahn of San Antonio and others began systematic studies of this interesting problem. It is now realized that we are dealing with an important cause of allergic ailments, one which has a definite connection with locality and seasons and that there cannot be good antiallergic management unless the question of mold allergy is properly investigated and, if found, treated accordingly.

Of recent publication I shall mention only two contributed by outstanding men. Hansel[5] stated that a significant number of hay fever patients are sensitive to molds. Alternaria is the most important fungus in his region (St. Louis). Much more satisfactory results are obtained by giving mold extract along with pollen extract.

Henrici,[6] in an interesting paper on characteristics of fungus disease, states that all fungus diseases exhibit hypersensitivity manifested by skin reactions. The general allergic state of these cases is characterized by so-called "ids" which are nodular, papular or vesicular lesions, sometimes eczema-like, sometimes psoriasis-like. In dermatomycosis the allergic state is definitely responsible for tissue injury and consequent inflammatory reaction. The ultimate healing is also due to their allergy. Guinea pigs show typical allergic behavior on second and later reinfection with dermatomycosis, and by constant reinfection the animal finally becomes immune.

I have been interested for the last few years in the study of molds, their occurrence, frequency and allergenic properties and in the treatment of cases of mold allergy. At first it seemed that a region like the Pacific Northwest with its high humidity would provide an especially suitable climate, where fungi of all kinds could grow abundantly, much more so than in other parts of this country. However, studies of other men interested in the subject show that there is everywhere, in all the different climates, an abundance of mold spores in the air. In few regions is the atmosphere sufficiently dry in certain seasons of the year so that fungi will be scarce. Freezing weather prohibits the growth of molds and at such times the air is free of mold spores.

The study of fungi as pointed out before, is comparatively new so far as the allergenic viewpoint is concerned. Therefor, we had to investigate all the molds that we found in the air in order to ascertain which are pathogenic and which are not. It is now apparent that some molds are so abundant and so universal in their distribution that their spores are more or less a constant ingredient of our atmosphere. The adaptation of the human race to these ingredients has made them innocuous from an allergenic standpoint. Molds of the Rhizopus and Mucor groups belong in this category. The most common mold in our region, Rhizopus nigricans, is apparently nonpathogenic.

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*Read before a meeting of King County Medical Society, Seattle, Wash., Nov. 4, 1940.

[1] Hopkins, J. G., Benham, R. W. and Kesten, B. M.: Asthma Due to Fungus. J.A.M.A., 94:6, Jan. 10, 1930.

[2] Feinberg, S. M.: Mold Allergy; Its Importance in Asthma and Hay Fever. Wisconsin M. J., 34:254, April 1935.

[3] Brown, G. T.: Hypersensitiveness to Fungi. J. Allergy, 7: 455, July 1936.

[4] Bernton, H. S.: Asthma Due to a Mold—Aspergillus fumigatus. J.A.M.A., 95:189, July 19, 1930.

[5] Hansel, French K.: The Value of Daily Atmospheric Counts of Pollen Grains and Mold Spores in Diagnosis and Treatment of Hay Fever. J. Miss. State M.A., 37:241, June, 1940.

[6] Henrici, A. T.: Characteristics of Fungus Diseases. Journ. Bact., 39:113, Feb., 1940.

The outstanding mold occurring in large quantities in our vicinity is the Penicillium expansum. It is the mold which causes decay of apples, and the fact that Washington is an apple state may account for the abundance of this particular fungus. It is not found so frequently in other parts of the country where studies have been made. A mold that has considerable allergenic power is the species Alternaria. We have found one, the Alternaria tenuis, frequently on our plates. While the quantity is never great, it seems to be definitely a frequent cause of allergic illness. Other fungi, which occur more or less regularly and at times in large numbers, belong to the species Aspergillus, Hormodendrum and Trichoderma. They are all definitely pathogenic.

Rusts and smuts, which belong genetically to the molds, are of little importance on the Pacific Coast. They are a seasonal and at times outstanding allergenic factor in the great grainbelt of the Middle West, as Wittich has reported in a series of publications. In the grain raising part of Eastern Washington rusts and smuts may also be important to some degree. I have seen an occasional case here, people employed at one of our flour mills, who developed asthma whenever rust-infected grain was handled.

Lately I have found that a considerable number of cases previously diagnosed as allergic eczema of varied etiology are manifestations of hypersensitivity, developed from a dermatomycosis. Therefore, list among the important fungi in our region also the Dermatophytes, more specifically Trichophyton and Epidermophyton.

The seasonal occurrence of mold spores in the air depends mainly on the climatic conditions of a given area at the time. As mentioned before, freezing weather inhibits fungus growth and in a great portion of this country the winter months are, therefore, the season during which mold spores do not occur in the atmosphere. Also arid regions, like most of our deserts and prairies, will not show an appreciable amount of fungus spores in the air during the rainless months, as extremely low humidity also inhibits fungus growth. The Pacific slope of our Northwest, due to our all year around high atmospheric humidity and mild winters, is one region where fungus spores are numerous in the air almost without interruption. Still, our charts show a greater and more continued abundance of molds during the rainy spring and autumn months. Conditions are somewhat reversed around the Great Lakes, where warm and humid summer months show a high incidence of fungus spores, as Feinberg has demonstrated, while the severe winters make that part of the country free of mold allergy during the freezing weather.

As with all other allergens, it is superfluous to consider such fungi as occur only occasionally. The great majority of mold allergies are due to those mold spores which are either constantly found in the air or appear in great numbers for periods of months in succession. In our vicinity, namely the Coast areas of northern Oregon, Washington and British Columbia, only the few fungi mentioned above are of importance.

Pure cultures of these are grown on malt agar, the spores harvested and by simple maceration and sterile filtration an extract is prepared which is used for tests and treatment. In this method of preparation I differ from our previous methods and from the procedure followed by most laboratories. Usually the whole pellicle, containing mycelia and some culture medium besides the spores, is dried, ground and then macerated. As I pointed out, we harvest and extract the spores only and, therefore, produce a more potent antigen.

I test by the scratch method with a 1:50 concentration, intradermally with a 1:100,000. Treatment is usually begun with the latter dilution. As in pollen allergy, there are cases that are so sensitive that a dilution of 1:1 million or even weaker has to be used at the start. I give treatments twice weekly, rarely exceed one milligram, that is, one-tenth of one cubic centimeter of the 1:100 dilution. Usually three or four months of treatment brings about desensitization. I have the definite impression that quite a number of cases require only one course of treatment.

Forms of fungus allergy follow the pattern of all inhalatory allergies except for the fact that one encounters a greater number of skin afflictions than are commonly seen in pollinosis or dust allergy cases. Among the 384 cases where mold allergy was complicated by sensitization to foods or pollen or dusts, I counted:

	Per Cent
18 cases of asthma	49
110 cases of rhinitis	29
16 cases of bronchitis	4
65 cases of skin allergy	17

Among 34 cases of uncomplicated mold allergies I saw:

6 cases of asthma	17
8 cases of rhinitis	23
5 cases of bronchitis	15
15 cases of skin allergy	44

The mold asthma and rhinitis cases are inhalatory allergies, so are the cases of bronchitis which are nothing but subclinical asthmas. The greater incidence of skin allergies from contact with mold spores is due to the fact that these people, as Henrici has pointed out, usually suffer or have suffered also from fungus disease and thus became allergic to the fungus protein. A goodly number of such cases are due to Trichophyton or Epidermophyton allergy. We have been successful in growing these organisms and preparing potent extracts for tests and treatment.

Desensitization with such extracts is usually followed by rapid improvement of the skin allergy, the so-called "trichophytid." In most cases the fungus disease as such is also greatly benefited by this treatment. Nevertheless, whenever dermatomycosis is present, it is often necessary to treat these patients locally, simultaneously with the desensitization. Usually I employ cold quartz light irradiation and gentian violet with satisfactory result.

The diagnosis of such cases is not difficult. Scales taken from the location where the mycosis originated, mostly the feet, hands or behind the ears, if placed on a slide and examined microscopically, show the mycelia and spores very plainly. The trichophytid itself is sterile, at least at the onset, as it is only an allergic dermatitis. In the case of mold allergies, as in all other cases of allergy, a careful and detailed history shows us the direction in which we have to look for the cause of the ailment. Patients who tell us that they are worse in the rainy months of the year, that they are better during the dry season and free during freezing weather, also that their conditions are aggravated by exposure to damp, musty places like basements, wood sheds, holds of ships and the like, such patients are usually fungus-sensitive. Almost always they are made worse by ingestion of other ferments like yeast, beer, root beer, sauerkraut, etc. Naturally any fungus foods as mushrooms and fermented cheeses give them symptoms.

Concerning results I can say that I have been able to cope successfully with most of the cases of hay fever who show a continuation of their allergy, even after the pollens have gone out of the air. In those patients, whose fungus allergy was complicated by sensitization to foods, pollen or dusts, treatment with fungus extracts has enabled me to afford them complete relief, while heretofore a part of their allergic symptoms had remained unsolved. I have had excellent results in those cases where fungus spores are the only or by far the most important allergenic factor.

As a general rule, I find that patients, whose allergies become manifest in early childhood or at least not later than the age of puberty, stay well and show no relapses, if treated properly and kept under control for about a year. Patients who show first symptoms in later life are more difficult to relieve because mold allergy in these cases is usually complicated by other sensitizations. In order to succeed it is imperative that all causative factors be either eliminated, like foods, feather dust, face powder, pets, etc., or that the patient be desensitized as in pollinosis or house dust allergy. On the other hand, if the fungus allergy is overlooked, all other measures will fail to bring complete relief.

Uncomplicated cases, patients who are allergic to molds only, comprise in the series presented less than 10 per cent. They offer the best chance for immediate and usually lasting relief, which shows to our great satisfaction that we have been able to achieve with fungus treatment the same degree of high efficiency as in uncomplicated pollen cases.

SUMMARY

A discussion of the problem of fungus allergy is presented.

The important fungi in the region of the western slope of the Pacific Northwest belong to the species Alternaria, Aspergillus, Hormodendrum, Penicillium and Trichoderma.

A great number of skin allergies are the result of fungus disease, especially so in cases of trichophytosis and epidermophytosis.

Skin testing and desensitization treatment are done with extracts of the fungus spores alone, with the exclusion of mycelia. The majority of fungus allergy cases are complicated by sensitization to other allergens. Only by proper elimination and/or desensitization to all pertinent allergens can successful treatment be achieved.

Cases of uncomplicated fungus allergy obtain immediate and lasting relief if treated with the proper fungus extract.

RADIATION TREATMENT OF SALIVARY FISTULAE*

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Salivary fistulae fortunately are of rather rare occurrence. When present they are usually secondary to surgical incision for inflammatory conditions. The development of roentgen and radium irradiation therapy for the acute inflammations, particularly in so-called "surgical mumps," has greatly reduced the number of cases requiring surgical drainage. However, in a certain number of cases a surgical attack is imperative and carries with it the possibility of subsequent fistula formation. While a fistulous tract extending from the glandular ductal system is of no grave significance, it is annoying to the patient and embarrassing to the surgeon.

Since the parotid gland is usually involved in surgery, fistulae arising in the submaxillary and sublingual glands are extremely rare. The condition is usually unilateral, although Reeves[1] has recently reported a case of bilateral parotid fistula cured by roentgen therapy.

Secretory tissue of the salivary glands is relatively sensitive to roentgen and radium rays and generally only small doses are necessary to obtain temporary suppression of function. Conversely, extremely large doses are required to produce an absolute destruction of secretory activity. It appears reasonable to assume that healing of the traumatized gland would be enhanced, if the constant outpouring of secretions could be reduced. Savitsky,[2] in 1936, reported twenty such cases treated with roentgenotherapy with excellent results. Reeves' single case responded well to irradiation therapy. Three cases are herewith presented, each being an individual problem, each being treated without adherence to a standard technic and each patient showing a complete recovery.

Case 1, C. S., a 60 year old male, developed an acute right parotitis following an upper respiratory infection. One week later, in February, 1938, he was referred for roentgen treatment. The gland was large and tender and appeared about to suppurate. 84 r was given which was followed in twenty-four hours by 60 r.

The parotid was surgically drained two days later. A fistula formed which was extremely annoying to the patient. Two months following the drainage a course of roentgenotherapy was given, 759 r being delivered into the gland at 150 KVP during a period of three weeks. This produced a temporary suppression of function which lasted about a month.

More heroic treatment was demanded so in August and September a series of roentgen treatments were given, using 200 KVP with ½ Cu 1Al filtration, the beam being directed tangentially to the parotid through both anterior and posterior fields of 6 x 10 cm. 1330 r was delivered to the anterior field and 1050 to the posterior.

This produced a suppression of secretion with closure of the fistula. There was no noticable dryness of the mouth. At the present time the fistula remains closed.

Case 2, H. O., an 11 year old girl had received a deep laceration of the parotid as result of an automobile accident two weeks previously. Accurate closure of the wound had resulted in a primary union of the skin and subcutaneous tissues. However, beginning three days after the accident, fluid had been collecting beneath the skin which required aspiration for removal. This had been done daily for over a week. The fluid was clear.

She was referred for radiation therapy and on June 8, 1939, 243 r were delivered into the left parotid, using 200 KVP with a filtration of ½ Cu 1Al. There was almost immediate cessation of secretion. On June 13, there appeared a small amount of fluid under the skin and the dose of 243r was repeated. Healing was thereafter uneventful.

Case 3, G. W., an 18 year old boy, received a deep laceration of the left parotid in an automobile accident. The wound was immediately closed and on the third postoperative day roentgenotherapy was begun. A total of 676 r, using 200 KVP, was administered over a period of three days. Healing was by primary intention and at no time was there any evidence of fistula formation.

COMMENT

In the first instance an adequate amount of irradiation to produce an absolute cessation of glandular function was necessary to allow the fistulous tract to heal. In case two a temporary reduction in the activity of the gland was sufficient to permit healing. The third case demonstrates the efficacy of roentgenotherapy as a prophylactic measure against fistula formation.

CONCLUSIONS

1. Chronic salivary fistulae require larger doses of roentgen ray, possibly due to the fact that infection has produced fibrotic changes as well as an increased radioresistance.

2. Acute fistulae heal readily following small doses of roentgen ray.

3. Fistulae due to trauma would seem to respond more rapidly and more readily and to smaller doses, the element of infection not being a complicating factor.

4. Immediate roentgenotherapy should be considered in traumatic injuries to the salivary glands to prevent fistula formation.

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*From Department of Radiology, St. Luke's Hospital.

[1] Reeves, R. J.: Roentgen Therapy of Bilateral Parotid Fistula. Am. J. Roentgenol. 43:425, March, 1940.

[2] Savitsky, J. G.: Roentgen Therapy of Chronic Fistulas of Parotid Gland. Abstract, Year Book of Radiology, p. 385, 1937.

SODIUM ACID SULPHATE POISONING*

REPORT OF CASE

Josepn Beeman, M.D.
PORTLAND, ORE.

The corrosive effects following ingestion of sulphuric acid are well known. The similar action of sodium acid sulphate apparently is not so widely known, as no reports of such poisoning are to be found in the literature, and no reference to it is made in the textbooks of toxicology or pathology. The following case report, while necessarily incomplete, is offered to call attention to the dangerous properties of the compound.

Sodium acid sulphate (sodium bisulphate—$NaHSO_4$) is a colorless, crystalline material in common use around homes in toilet bowl and automobile radiator cleaners. It should not be confused with sodium sulphate (Glauber's salt). The material is readily soluble in water, forming a colorless, odorless solution. In concentrated solutions the material is highly corrosive, being in effect a half-neutralized sulphuric acid. Commercial preparations in the form of white granules might easily be mistaken for a saline laxative.

A white male, age 48, was found dead in bed. The investigating officers stated that a dark-colored liquid material was spilled over the floor near the head of the bed and appeared to have been vomited. A water glass on a bedside table contained a small amount of dark-colored fluid. Dark, viscid material was spilled on the bathroom floor and in the toilet bowl. A can of Saniflush was upset in the bathroom. No motive for suicide could be ascertained.

The autopsy was performed by Dr. John Straumfjord of Astoria, Oregon, who has kindly placed his findings at our disposal. Face, neck and shoulders were burned a black color. Chin and chest were covered with bloody vomitus. Underwear had numerous holes of the type produced by an acid. Lips were black, but not charred. Charring of the lower end of the esophagus was present. The stomach contained 600 cc. of dark brown, viscid material. The gastric mucosa was charred a dark brown and varied in thickness from 0.6 to 1.2 cm. No localized ulcerations were present. These corrosive findings extended through the duodenum to the jejunum. No other significant gross pathologic changes were noted. Microscopically, the gastric mucosa was charred, necrotic and edematous. A slight infiltration by polymorphonuclear leukocytes was present in the submucosa and muscularis.

By dialysis, 17.9 grams of sodium acid sulphate were isolated from the stomach content; the same material was demonstrated in the vomitus on the bed and in the bathroom. Analysis of the sample of Saniflush showed it to consist of 85 per cent sodium acid sulphate, corresponding to a technical grade of the salt. Gastric lavage with 50 per cent solution of Saniflush in a rabbit produced similar findings to those noted at autopsy.

COMMENT

The above described case indicates the highly corrosive action of a common household material, producing lesions similar to those produced by sulphuric acid. In cases where death is not due to shock, treatment should be directed toward dilution and removal of the poison by ingestion of magnesia or soap in copious quantities of water. Passage of a stomach tube entails a definite danger of mechanical perforation of the esophagus or stomach. As in other corrosive poisonings, the possibility of esophageal stricture or pyloric stenosis as sequelae is apparent. A word of warning should be given against the use of sodium bicarbonate as an antidote for this and other acid poisonings; the evolution of carbon dioxide gas can easily cause a rupture of the stomach.

SUMMARY

A case of poisoning by sodium acid sulphate is presented. The findings are similar to those of sulphuric acid poisoning. Sodium acid sulphate is commonly met with in homes in the form of toilet bowl or automobile radiator cleaners.

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*Crime Detection Laboratory, Department of State Police and Department of Pathology, University of Oregon Medical School.

DEVELOPMENT AND PROBLEMS OF A STATE MEDICAL JOURNAL*

Clarence A. Smith, M.D.
SEATTLE, WASH.

At the end of the last century the Pacific Northwestern states were isolated from the rest of the country. Rail travel was slow and tedious. Highways of the horse and buggy era were clouded by dust in summer and mired with mud in winter. By steamship, travel was prolonged and circuitous. The medical profession was widely separated from cultural and research centers. Portland had the advantage of a medical school which provided an impetus for certain physicians, members of the faculty, to pursue study and investigations which were doubtless reflected on other members of the profession. This condition was in contrast with that of Seattle physicians who had no stimulus to rise above the daily routine of practice. Doubtless many physicians conducted practice on the basis of medical school acquirements, supplemented by results of practical experiences with little additional study.

In 1898 there was sufficient protest against this inertia and absence of inspiration toward medical progress in Seattle to stimulate King County Medical Society to appoint a committee for establishing a medical library. This was the genesis of Washington Medical Library Association which, being

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*Read before the Annual Meeting of the Medical Library Association, Portland, Ore., June 25-28, 1940.

Published in Bulletin of Medical Library Association. 29:81-85, Dec., 1940.

duly incorporated, proceeded to collect books and journals which were housed in the public library, recently organized and occupying the spacious residence of a deceased pioneer. About a year and a half later this venture ended disastrously, when the building with contents was destroyed by fire.

Professional efforts toward continued self-advancement were dormant until the summer of 1902. Then a group of physicians revived the purpose of organizing a medical library. In an endeavor to promote acquisition of medical literature, it was proposed to establish a medical journal, from which books received for review and journals in exchange would form a nucleus for library development. The title selected for the proposed medical experiment was NORTHWEST MEDICINE. Clarence A. Smith was selected editor-in-chief and James B. Eagleson, managing editor. When it was proposed that the county medical society should sponsor the literary venture, the suggestion was unanimously declined with the assertion that it would prove a failure and involve the society in an unwelcome burden of indebtedness. Therefore, it was concluded to entrust this newborn infant to the tender mercies of the somnolent medical library, which would serve to give it somewhat of a literary flair it might not otherwise possess.

Since neither Eagleson nor I had had any experience in this line of activity, problems accumulated from the outset. Most urgent was the financial uncertainty. With no available funds on which to depend, the question arose immediately, whence would come the money to pay the first printer's bill. Dr. Eagleson was resourceful. He suggested amending the library charter by making it a stock concern. Then began a canvass of the profession to purchase shares of stock at five dollars each, to include two years subscription to the nebulous medical journal. Within recent years administrators of physicians' estates have presented these old stock certificates, with an inquiry as to their cash value, although this stock feature of the library association was revoked many years ago.

With money from this source, and advertisements which were assembled with difficulty, the new venture was launched and met its financial obligations. For a period of ten years there were no journal salaries except that paid to the office secretary. In all his business transactions Dr. Eagleson scrupulously followed the plan of paying every indebtedness at the end of each month. Whenever the journal had no bank balance, he met the deficiency from his personal bank account. This continued until the journal was indebted to him for over $600. During the life of the journal until that time, the title page had been devoted exclusively to publication of table of contents. Then a prospective advertiser offered to purchase the lower half of the page for a substantial figure. This was received with enthusiasm by all except Eagleson. He insisted that NORTHWEST MEDICINE should remain different from other medical journals and preserve the title page free from advertising. As a clincher for his argument, he proposed to purchase that half page for the same figure offered by the advertiser, which would apply on his claim against the journal. Consequently, advertising on this page was excluded for a number of years until the indebtedness to him was liquidated.

Medical literary material collected through the journal was kept in reserve, since no place was available for a medical library in the absence of funds for instituting it. When Metropolitan Building Company erected the Cobb Building in 1910 for medical and dental offices, they offered space rent free for a medical library, which has continued to the present time. For nearly thirty years the library was supported by the income from dollar monthly dues from about a hundred and seventy-five physicians who exhibited this amount of financial interest in its maintenance. About three years ago King County Medical Society absorbed the medical library, adding ten dollars to the annual dues of membership, thus providing a fund which has entirely transformed its physical features and assured it a progressive future.

In the winter of 1908 a group of Portland physicians proposed a closer relationship between the physicians of Oregon, Washington and Idaho. At a meeting, held in Portland, January 29, 1909, when the plan was consummated, Oregon was represented by K. A. J. Mackenzie, W. T. Williamson, W. M. House and W. H. Byrd; Washington by J. B. Eagleson, Y. C. Blalock, C. H. Thomson and C. A. Smith; Idaho by J. L. Stewart. From this developed the Tri-State Medical Society which held a meeting of the three state organizations once in three years, rotating among the three states. After this organization had functioned for two complete series of meetings, it evolved into Pacific Northwest Medical Association, including Montana, Utah and adjacent Canadian provinces. For a period of years these meetings were largely attended and brought together distinguished leaders in the medical profession.

When the committee representing the three state associations was perfecting the tri-state organization, it was agreed that a tri-state medical journal would be advisable as the official publication for the state associations. Accordingly, it was voted to lease NORTHWEST MEDICINE from Washington Medical Library Association for a nominal annual sum, with provision that books received for review and medical journals in exchange should remain the property of the library. It was decided that the journal should be controlled by a board of nine trustees, three from each organization with equal authority, regardless of membership of the respective associations. This plan makes NORTHWEST MEDICINE unique among medical journals, it being the only one under equal control of separate organizations. There are several journals belonging to individual state associations, at the same time representing other states which, however, have no voice in their management. This plan has worked without friction and apparently to general satisfaction. The first Board of Trustees included from Oregon K. A. J. Mackenzie and W. T. Williamson of Portland, and C. J. Smith of Pendleton. They chose S. E. Josephi of Portland and W. C. Smith of Salem as associate editors. Trustees from Washington were J. R. Yocum of Tacoma, H. M. Read of Seattle and Wilson Johnston of Spokane. They selected as associate editors C. A. Veasey of Spokane and E. R. Kelly of Seattle. Idaho trustees were C. H. Cline of Idaho Falls, J. W. Givens of Orofino and R. L. Nourse of Boise. As associate editors they chose J. M. Taylor of Boise and C. E. Sears of Wallace.

The financial support of a medical journal is derived in part from subscriptions, the larger portion being obtained from advertisements. There are no products offered for public purchase which are presented with so much mendacity and gross exaggerations as some medicinal preparations. Illustrations of this are evidenced every day in the radio ballyhoo for certain articles with preposterous claims for impossible benefits obtainable by their administration. No commercial product would receive any degree of public favor, if advertised in this manner. Advertisements of medicinal preparations are classified as ethical and unethical, the latter including those for sale with secret formulae, fanciful and deceptive titles, presented with false and exaggerated claims of merit and radio publicity. Nevertheless, certain medical journals carry these advertisements and enrich their owners by willing payment of high rates for publicity given unethical products.

The Council on Pharmacy and Chemistry of the American Medical Association devotes much time and labor in the effort to obtain facts relative to products offered for examination, which are submitted to meticulous laboratory determinations of their composition and medicinal qualities. Every week *The Journal of the American Medical Association* publishes results of such examinations, specifying approved and rejected products. There are thirty-five state medical association journals, bound together by an agreement to advertise only medicinal preparations which have been approved by the Council on Pharmacy and Chemistry. This assures the reader that those advertised in their pages are trustworthy and reliable.

One of the problems of a medical journal editor is the selection of papers for publication. NORTHWEST MEDICINE agrees to publish papers read before the annual meetings of the three state organizations which it represents. Appearance on their respective programs is taken as a guarantee of their quality and acceptability. Other papers must be reviewed with care before publication, and if they are not considered of sufficient scientific value, they are declined. I once heard Dr. Morris Fishbein, editor of *The Journal of the American Medical Association,* say that most of his conflicts with critical members of the medical profession, and attacks upon him and *The Journal,* are instigated by rejection of certain papers, whose authors subsequently seek satisfaction from these forms of retaliation. This is an experience that an editor must consider as more or less a feature of the business in which he is engaged.

Since NORTHWEST MEDICINE represents three state organizations on equal terms, often it presents problems peculiar to such relationship. It is necessary continually to have in mind an equitable publication of papers from the three states with correspondingly appropriate assignment of space for matters representing activities and features of each of the three. It is necessary to keep in mind the fact that distance requires constant activity to secure necessary material for monthly publication. Fortunately, these necessities have been satisfactorily accomplished with a minimum of friction and expressions of dissatisfaction.

This paper has been an attempt briefly to present some of the problems inherent in publication of a state association medical journal, and to demonstrate some of the features necessary for its maintenance and promotion. More material might be offered, featuring other phases of medical journalism, but these will suffice as a sketch of some of the problems involved.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

FOUNDED 1874

SIXTY-SEVENTH ANNUAL MEETING, PORTLAND, SEPT.

MEDICAL PREPAREDNESS

The program of medical preparedness in the State of Oregon has up to the present progressed satisfactorily. This is due to the close cooperation between Governor Sprague, the Officers of Oregon State Medical Society, and finally, of the utmost importance, cooperation of the individual members of the Society.

The matter of receiving answers to the questionnaires sent out by the American Medical Association is still one that has not been completed. Of the 1438 questionnaires sent to Oregon physicians 1203, or 83 per cent, have been completed and returned. It is important to bear in mind that these questionnaires are being sent out by the American Medical Association through its Committee on Medical Preparedness. This committee was created by the House of Delegates of the American Medical Association of its own initiative for the purpose of offering the utmost of cooperation and assisitance to the national defense establishment. Members of the medical profession who have not filled out these questionnaires are again requested to do so, bearing in mind that filling out of this form does not commit the individual physician in any way.

It is estimated that the total strength of the Army will be about 1,400,000 men by next spring. It is also estimated that about 9,000 physicians will be required to serve this number. Of this total number, about 5,300 will have to be obtained largely from the physicians in private practice during the next few months. This means, of course, that physicians who are of draft age and are not members of the Medical Reserve Corps are subject to draft under the same circumstances as any other draftee and that they may, in fact, be drafted and required to serve as enlisted men, if they have not previously established their status as physicians in the Medical Reserve Corps. In order to avoid such a situation, physicians of draft age are urged to submit their applications for commission in the Medical Reserve Corps either before or promptly after selection for military service.

The various local Draft Boards and Medical Advisory Boards have functioned well, even though at considerable personal sacrifice on the part of the physicians involved. In some counties of the state every physician is serving in one way or another these various Boards and the Medical Society is both proud and appreciative of their response

Members of the Society, when debatable problems arise in their relationships to the various Boards, are requested to submit these matters immediately to the State Medical Society for proper adjustment. This will often relieve the individual member from various types of pressure which the State Society should assume where its function becomes that of a buffer.

Karl H. Martzloff, *President.*

DRAFT BOARD EXAMINATIONS

Physicians of Portland who volunteered their services as examiners for draftees suddenly found themselves in a dilemma. They were asked to do a large number of examinations in a specified time and to accomplish this they would have practically had to give up their practices. Each examination was taking from thirty to forty-five minutes, and when the number of requested examinations was suddenly increased, the concern of all examiners was real. On top of this came a sizeable influenza epidemic with its demands, so there was a real crisis.

Portland physicians were not the only ones affected, the position they were placed in being repeated in every city in the state and probably in the country. The way the examiners worked themselves out of their problem is of some general interest and outlining the procedure adopted may be of some help to other communities.

In the first place, examiners of eleven draft boards, which included all but two such boards, agreed to combine their examinations and to meet on specified evenings to do them wholesale. The U. of O. Medical School was an ideal place to conduct the examinations so Mr. Ralph Couch, the master organizer, was asked to help. He did this unhesitatingly and worked out a technic which was instituted immediately, with the result that examinations were started in the Out-Patient Clinic on Monday and Friday nights. The first night several "bottle-necks" were found and remedied. The third night there was hardly a hitch in the whole plan.

The thirty-five to forty physicians and dentists were assisted by fourteen volunteers from the American Legion Post, who acted as traffic regulators and as recording clerks. In addition, Mr. Couch "loaned" six of his trained staff to help at the admitting office. He and his assistant, Mr. Zimmerman, were busy studying the flow of traffic.

The result of this organization was astonishing. The first night it took three hours to examine 146 draftees. The second night it took three hours to examine 180, while the third night it took two hours and forty minutes to examine 193 men, and the fourth night 203 were put through in less than three hours.

The organization plan consists of eleven stations with functions as follows:

Station	*Function*		
1	History	6	Fluoroscopy
2	Measurements	7	Short Arm
3	Vision	8	Urine
4	Ear, Nose, Throat	9	Blood Test
5	Hearing	10	Dental
11	Completion of Examination by Their Respective Examining Boards.		

ORGANIZATION ACTIVITIES

FEE SCHEDULES

The Council of the Oregon State Medical Society met on December 3 and considered a number of topics, some of which were postponed for subsequent discussion and action. A good deal of time is being consumed at these meetings in discussing fee schedules that various agencies are trying to get the medical society to adopt. The Council reiterated its established policy in this respect and did so with great force. The Council is opposed to establishing any fee schedule for any kind of work whether it be under insurance contract, or any form of medical aid contract, whether it be a private, state or federal program. This applies to the fee schedule which the Farm Security Administration is attempting to establish, that of the State Welfare Commission and Indemnity Insurance contracts. The obvious danger in these contracts is that they become established fee schedules instead of schedules which have been accepted for work within certain groups, such as the low income group, the semiindigent and indigent groups.

The Council also reiterated its established policy in accepting Government funds for various medical enterprises. The policy is to accept such funds only if the program is planned and executed by Oregon State Medical Society without other obligation than to account for the expenditure of the funds.

The Council granted consent to its appointed State Committees to utilize facilities of governmental agencies in developing a well developed program of postgraduate instruction, provided it was carried out under supervision of the State Medical Society's Committee.

Still another repetition of constantly affirmed stand was the suggestion that any family coverage program should be carried out under a Cash Indemnity Plan; in other words, family coverage should be given through Indemnity Insurance without publishing a fee schedule.

If physicians of the state could only realize the time consumed in repeating over and over these established policies, they would appreciate the position of the Council more fully. They should also be aware of the constant attempt of various agencies to establish fee schedules and should be fully cognizant of the danger of such action. The Council of Oregon State Medical Society is the safeguard for the profession of the state, and it is discouraging at times to find that physicians are not as loyal to their Council as they should be. The whole work of the State Council and its Bureau of Medical Economics would be far simpler, if each physician would take the trouble to acquaint himself with the established policies of the Society. There would be no problem in medical economics, if every physician cooperated with the Council and the Medical Service Bureaus as coordinated through the Bureaus of Medical Economics.

SOCIETY MEETINGS

COOS-CURRY COUNTY MEDICAL SOCIETY

Coos-Curry Medical Society met in Marshfield December 4. Alfred J. French presented a paper on "Coronary Occlusion." Officers for 1941 were elected as follows: R. H. Fields, Gardiner, president; Bernard G. Barkwill, Marshfield, vice-president; R. M. McKeown, Marshfield, secretary-treasurer.

JACKSON COUNTY MEDICAL SOCIETY

Jackson County Medical Society held its last meeting in November at the Hotel Medford. Harvey A. Woods of Ashland presented the scientific paper on "Injuries of the Chest."

The society met again in Medford, December 11. The scientific paper was delivered by O. J. Halboth on "Cranial Cerebral Trauma." Officers elected for the coming year are as follows: Harvey A. Woods, Ashland, president; O. J. Halboth, vice-president; Charles W. Lemery, secretary-treasurer.

LANE COUNTY MEDICAL SOCIETY

Lane County Medical Society met December 20 in Eugene for the annual meeting and election of officers. R. C. Romig was installed as president; John Kuykendall was elected president-elect; S. Glen Morgan, vice-president; and Robin M. Overstreet, secretary-treasurer.

MULTNOMAH COUNTY MEDICAL SOCIETY

The first semimonthly meeting of Multnomah County Medical Society was held at Portland, December 4. W. K. Livingston spoke on "Diseases of the Arteries," and Martin H. Howard on "Diseases of the Veins."

The annual banquet and election of officers was held December 18 at the Portland Hotel. William J. Smith, president of the Oregon Wild Life Federation, spoke on "Conservation of Wild Life in Oregon" and presented a film entitled "The Polluted Willamette." H. Stanley Lamb was inducted as president of the Society for 1941. George E. Henton was chosen president elect for 1942. Other officers for 1941 were elected as follows: Charles P. Wilson, vice-president; John Raaf, secretary; B. O. Woods, treasurer.

POLK-YAMHILL-MARION MEDICAL SOCIETY

The December meeting of the Polk-Yamhill-Marion Medical Society was held in Salem. Albert Holman of Portland addressed the Society on "Toxemia of Pregnancy and Nephritis in Pregnancy." Discussion was opened by Dr. Buren. Two short movies were shown by Mrs. Morehouse: "When Bobby Goes to School," and "X-ray Movies."

UMATILLA COUNTY MEDICAL SOCIETY

Umatilla County Medical Society met December 10 at the Pendleton Hotel, Pendleton Officers elected for 1941 included Donald Wair, president; L. J. Feves, vice-president; T. M. Barber, secretary-treasurer, all of Pendleton. Karl H. Martzloff of Portland, discussed the activities of the State Society. John H. Fitzgibbon of Portland discussed some recent bills before Congress affecting medical economics.

YAMHILL COUNTY MEDICAL SOCIETY

Yamhill County Medical Society met December 3 in McMinnville. Goodrich C. Schauffler of Portland presented the paper of the evening on "Difficulties Encountered Late in Labor Contributing to Maternal Mortality and Morbidity."

STATE BOARD OF HEALTH

Central Oregon Health Officers Hold Meeting

The Central Oregon Division of the Oregon State Health Officers Association held a dinner meeting on Thursday,

LIBRARY OF THE
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

December 19. Problems in public health peculiar to this area were discussed.

Public Health Official Visits Oregon

Senior Surgeon Walter Harrison of the United States Public Health Service, assigned to the Ninth Corps Army with headquarters in San Francisco, made a visit to the Pacific Northwest, spending December 19 and 20 in Oregon, visiting the several army camps and public health officials with a view to establishing closer cooperation between the army and the public health officials in areas adjacent to army posts for the prevention and spread of communicable disease due to troop concentration. During his stay Dr. Harrison was the guest speaker at the Central Health Officers' meeting.

Maternity Hospitals Inspected

Inspection of ninety-three maternity services has now been accomplished by the division of maternal and child health of Oregon State Board of Health under the rules and regulations prepared jointly by the division of maternal and child health of the State Board of Health and the committee on maternal and child welfare of Oregon State Medical Society. Of the ninety-three services examined, eighty-nine are now licensed. These are adequate in facilities already established, or have been made so by changes which were necessary to comply with the rules and regulations. In addition to inspection by a physician, the State Plumbing Inspector and the State Fire Marshal must concur in the opinion that the premises are safe for the care of the mother and child.

Sanitary Engineer Is Honored

Mr. Carl E. Green, Director of the Division of Sanitary Engineering of the State Board of Health, has been notified that his report recently made to the American Public Health Association is to be printed and distributed by that Association as a compendium on the Standards of Water Purity as recommended by the committee on waterways pollution of the American Public Health Association.

Laboratories to Hold Conference

The Annual Conference of Approved Laboratories will be held on January 10 and 11 in Portland. Guest speakers will include Gatlin R. Brandon, Dr. Erwin C. Drescher, and Dr. William Levin of the Oregon State Board of Health. Dr. Joseph P. Cleary, City Health Bureau, Dr. H. H. Foskett, Emanuel Hospital, Dr. Charles H. Manlove, Good Samaritan Hospital, Mr. Nicholas P. Sullivan and Dr. Sture M. Johnson of the University of Oregon Medical School and Dr. Joseph A. Beeman, Director of the Crime Detection Laboratory of the Oregon State Police and Eugene R. Del Vecchio, Senior Medical Technician, United States Public Health Service of San Francisco, California. Following each paper an open discussion will be held.

MEDICAL NOTES

JOSEPHINE GENERAL HOSPITAL, Grants Pass has recently acquired $4,000 worth of new equipment, including a $3,000 x-ray machine. The hospital will be incorporated in the near future to make it legally eligible for gifts and endowments.

DANIEL TRULLINGER, Clackamas Couty health officer, was injured in an automobile accident December 2. He received fractures of the right wrist and ankle, left arm, and sustained cuts about the face. He is being treated at Oregon City Hospital.

NEIL BLACK, director of the division of Medical Care for the State Public Welfare Commission, has resigned his position and will go to Klamath Falls to enter private practice.

C. L. GILSTRAP has been appointed City Physician for La Grande to fill the vacancy left by D. R. Rich, who has been called to the army.

NORTH PACIFIC PEDIATRIC SOCIETY will hold a meeting January 25, at Doernbecker Hospital and University of Oregon Medical School, Portland.

OBITUARIES

DR. EDWARD L. ZIMMERMAN, Eugene, died suddenly December 2. He was born in Kansas, 1889, received his M.D. degree at Jefferson Medical College, and practiced in Eugene since 1913. He was president of Lane County Medical Society in 1926 and at the time of his death was Chief of Staff of the Sacred Heart Hospital.

DR. JAMES O. MATTHIS, Salem, died December 5 at the age of 55 from a self-inflicted gunshot wound in the head. He attended Willamette University and Memphis Hospital Medical College. He practiced medicine in Monmouth from 1909 until 1917 when he enlisted in the army. Following the war he settled in Salem.

DR. MARK W. EMERY, Portland, died November 27, at 48 years of age, following a heart attack. He was born in Portland, graduated from the University of Oregon Medical School in 1915, and entered practice in Portland following an internship at the Good Samaritan Hospital.

DR. MOSES EASON SHERER, Staff Physician at the United States Veterans Hospital in Portland, died of a sudden heart attack November 29. He was born 1883 in Alabama. He was a veteran of the World War, following which he became a member of the U. S. P. H. S. He had been at his post in Portland since 1930.

DR. NEWTON MURPHY, Portland, died December 7 at the age of 79. He was a graduate of Northwestern University Medical School in the class of 1880; served in the United States Army for a time; practiced in Colorado, South Dakota, and Minnesota; and had resided in Portland since 1908. He was a member of the Elks Lodge, Odd Fellows, Woodmen of the World, and was a 32d Degree Mason.

DR. EDWIN P. FAGAN, Portland, died December 12 from self-inflicted gunshot wound in the head. He had been suffering from a nervous breakdown. He was practicing medicine with the Portland Clinic and was 38 years of age at the time of his death.

DR. FRED GULLETTE, Portland, died December 22 of pneumonia. He was born in Chicago in 1872 and had been a resident of Oregon for 50 years. He served as a Captain in the Army Medical Corps during the World War.

DR. CHARLES T. CHAMBERLAIN, Portland, died of a stroke December 25. He was born in Albany in 1880. He was the son of the late George E. Chamberlain, who was Governor of Oregon from 1900 to 1908 and was later United States Senator. Dr. Chamberlain received his Medical Degree at Cooper Medical College in San Francisco in 1903 and later took postgraduate work in Vienna in 1911 and 1912. He specialized in eye, ear, nose and throat until he retired several months ago.

MAKE RESPONSES 100 PER CENT

Washington ranks as one of the top states in obtaining return of questionnaires mailed to all physicians by the Committee on Medical Preparedness of the American Medical Association, according to word given out by Raymond L. Zech, state chairman. Of nearly 2,200 physicians in the state less than 150 have failed to return their questionnaires. The central office of the State Association will continue to canvas these remaining doctors.

In a letter addressed to Dr. Zech last month, Dr. R. G. Leland of the national Committee on Medical Preparedness called attention to the necessity of the survey and urged all physicians who have not filled in the questionnaire to respond. Additional questionnaires may be obtained from the central office of the State Association.

Dr. Leland says: "The Committee on Medical Preparedness desires information pertaining to all physicians in the United States regardless of their affiliations with the Army, Navy, Public Health Service or any other work. This is likewise true regardless of whether they may be newly licensed or whether they may be retired or physically disabled.

"It should be clear to anyone, who understands the purpose of the survey being conducted, that accurate and complete information concerning the medical personnel resources of the United States can be had only if the Committee has accurate and reliable information pertaining to every phase. This does not mean that every physician will be expected to serve in some capacity, but it does mean that, if information is available relative to the various categories into which physicians may fall, it will then be possible to prepare more accurately for the needs of the armed forces, industry and the civilian population. Without such information the Committee would be lacking many unknown quantities, and it would be impossible to arrive at reasonable and practicable conclusions."

Physicians who have failed to send in their questionnaires are urged to do so immediately, mailing them to the Central Office, 218 Cobb Bldg., Seattle.

DOCTORS WANTED

Washington State Medical Association has received the following requests for physicians:

Palmer, Alaska: A telegram from Dr. O. H. Armstrong reads: "Do you have second or third year house man preferably in surgery who would like to take over small community hospital in Alaska. Eight beds. New throughout. Well equipped. Territory will insure good income at present with large scale expansion in near future. No special requirements except capability in medicine and courage. Hospital will be ready for occupancy in January or February, 1941." Dr. Armstrong requests applicants answer by wire.

Raymond, Wash.: Dr. A. C. Kuehner of Riverview Clinic and Hospital is seeking assistant in general practice. Salary, to begin with, $300 per month.

Soap Lake, Wash.: McKay Memorial Research Hospital (state institution) is seeking young, unmarried physician, preferably with one year's experience as an intern. Salary is $200 per month with room and board. Address Dr. T. J. Fatherree, Superintendent.

Yakima, Wash.: Medical Division, Yakima County Welfare Department is seeking physician as staff member. Salary $225 per month plus maintenance. Address Dr. H. S. McGuinness, Chief-of-Staff, Sloan Building.

Almira, Wash.: Physician of general training needed in this town to take up practice of physician who has moved to another city. Almira has 500 population with surrounding area of another 1,500. Address Mr. Ray L. Johnson, Secretary, Chamber of Commerce. Need is urgent.

SELECTIVE SERVICE BOARD CHANGES

In December was published a list of physicians serving on the various Selective Service System Boards throughout the state. Since publication of the list the following changes and additions have been made. W. Marvin Munsell is examining physician for Yakima Local Board No. 1 at Grandview and is assisted by A. C. Meagher of Toppenish. Sam C. Standard replaces Frank J. Clancy on Seattle Local Board No. 8. James L. Gilleland replaces J. A. Smith, both of Pullman, on Advisory Board No. 3.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

Cowlitz County Medical Society met at Hotel Monticello, Longview, December 18, at a regular dinner meeting. The following officers were elected for the coming year: President, R. J. LaRue, Castle Rock; President-elect, J. L. Norris, Longview; Secretary-treasurer, L. S. Roach, Kalama; Corresponding Secretary, J. A. Nelson, Tekoa; State Convention Delegate, J. F. Christensen, Kelso, and H. D. Fritz, Cathlamet, Alternate.

C. J. Hoffman of Woodland gave a most interesting talk on the first meeting he attended thirty-one years ago of Cowlitz County Medical Society at Kalama. The society met once a year to discuss scientific subjects and elected officers for the coming year.

J. L. Norris spoke on his recent trip East, where he attended the meeting of Interstate Postgraduate Medical Assembly of Cleveland and American College of Surgeons in Chicago.

The auxiliary met the same evening at Hotel Monticello. Mrs. C. J. Sells and Mrs. R. J. LaRue were hostesses. A Christmas program was given, and they packed a basket of jams and jellies to be given to the hospital.

GRAYS HARBOR COUNTY MEDICAL SOCIETY

At the December meeting of Grays Harbor County Medical Society the following officers were elected: L. L. Goodnow, president; A. W. Riedesel, president-elect; F. T. O'Brien, vice-president; A. W. Riedesel, Secretary-Treasurer; M. P. Graham, delegate to the State Convention; E. L. Calhoun, alternate delegate; H. C. Randolph, to the board of censors for a three-year term.

Caspar W. Sharples of Seattle gave a talk, illustrated by lantern slides, on "Differential Diagnosis of Abdominal Conditions." Arthur Anderson, executive-secretary of the State Association, was a visitor.

KING COUNTY MEDICAL SOCIETY

A monthly meeting of King County Medical Society was held in conjunction with Seattle District Dental Society at Medical and Dental Building, Seattle, December 2, at 8:15 p.m. Presidents M. Shelby Jared of the Medical Society and F. J. Dingler of the Dental Society presided.

Dr. Jared announced a course of lectures to be delivered by Dr. Frank L. Horsfall, Jr., of Rockefeller Institute, New York, comprising the Seminar in Internal Medicine at Seattle General Hospital, to be held December 26-28.

Amendment to Article IX of the By-Laws was read, the substance of which pertained to an increase of annual dues, owing to an increase in dues to the State Medical Association, which will raise annual membership to $40 for those who have been in practice more than six and less than twenty-six years, the dues for members less or over these dates being $38. Of this sum, $5 shall be set aside for the Building Fund and $10 for maintenance of the Medical Library. Dues of those outside the limits of Seattle shall be $35. A motion was read for the second time to suspend for the coming year the $5 payment to the Building Fund.

The following applications for membership were read: E. J. Baer, E. F. Ching, H. V. Hartzell, S. J. Minkove, Paul O'Hollaren and R. D. Roys.

Officers were nominated for the ensuing year.

O. T. Dean read a paper on "Dental Surgery." He emphasized cooperation between physician and dentist, discussed anesthesia and administration of the anesthetic, with postoperative treatment.

E. G. Bannick read a paper, "Present Status of Foci of Infection in Internal Medicine." He described the changing concepts regarding focal infection which have developed in recent years, especially as applying to teeth and tonsils. He discussed foci of infection as applied to arthritis, peptic ulcer, nephritis and other bacterial diseases. The papers were discussed by P. W. Willis, Sr., Purman Dorman and F. H. Wanamaker.

KITSAP COUNTY MEDICAL SOCIETY

Annual meeting of the Kitsap County Medical Society and Kitsap County Dental Society was held in Bremerton December 13. Medical officers of the Navy Department were invited as guests.

KLICKITAT COUNTY MEDICAL SOCIETY

Klickitat County Medical Society held a meeting at the office of Russell L. Baker, White Salmon, November 15. Present were Gerald Turley and Thomas Mead of Goldendale, J. A. Balsiger and D. V. Ogievsky of Klickitat and Russell Baker of White Salmon.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of Pierce County Medical Society was called to order in the Medical Arts Building, Tacoma, December 10 by H. J. Whitacre, president. The scientific program was opened by R. E. Mosiman of Seattle, with a paper on "Wound Healing." Dr. Mosiman presented his subject by slides and discussed in detail the physiologic processes concerned with wound healing. Cellular biology was stressed.

The second paper of the evening was by S. F. Herrman, on "Meckel's Diverticulum." Dr. Herrman discussed the embryology and showed that Meckel's diverticulum is a persistent remnant of the vitelline duct of the embryo and is found in one to two per cent of adults. He described a series of eight personal cases, several of which illustrated the fact that a Meckel's diverticulum may be the cause of a supposed appendicitis.

L. E. Powers announced that he was sending cards to the doctors asking for data concerning the number of influenza cases and complications.

C. F. Engels, new editor of *The Bulletin,* was commended for his editorial and the fine current issue.

SPOKANE COUNTY MEDICAL SOCIETY

The monthly meeting of the Spokane County Medical Society was held in the auditorium of the Paulsen Medical and Dental Building in Spokane, December 12. It was addressed by Marion M. Kalez, Lieutenant, Senior grade, U. S. N. He discussed recent work with anoxemia as it affects flyers. The report was based on studies conducted at Sand Point Naval Air Base, Seattle.

WALLA WALLA VALLEY MEDICAL SOCIETY

Regular meeting of the Walla Walla Valley Medical Society was held at the Marcus Whitman Hotel, Walla Walla, December 12. The meeting was addressed by Roger Anderson of Seattle, who discussed "Tender Soles." He covered foot exercises, manipulation and massage, as well as shoe fitting.

YAKIMA COUNTY MEDICAL SOCIETY

Annual meeting of the Yakima County Medical Society was held at the Commercial Hotel, Yakima, December 9. Officers elected were Herbert C. Lynch, president; B. C. Koreski, vice-president; James P. Thompson, secretary, and Kenneth M. McCoy, treasurer.

Scientific portion of the meeting included papers by H. L. Leavitt and C. F. Davidson, of Seattle.

SEATTLE SURGICAL SOCIETY

The annual meeting of Seattle Surgical Society will be held at King County Hospital Auditorium, Seattle, January 31 and February 1. The guest speaker will be Dr. Allen O. Whipple, Professor of Surgery, College of Physicians and Surgeons, Columbia University; Director of Surgical Service, Presbyterian Hospital, New York.

PROGRAM

Friday, 9:30 a.m.

1. D. G. Leavitt: Diffuse Tibial Sclerosis (Case Report).
2. S. N. Berens: Pituitary Tumor (Moving Pictures).
3. A. H. Peacock: Surgical Injuries to Ureter.
4. B. P. Mullen: Complications Following Gastric Resection.
5. H. D. Dudley: Acute Suppurative Tenosynovitis.
6. J. I. Tuell: Rehabilitation of Patients with Radical Local Resections of Bone Tumors.

7. P. R. Rollins: Stilbestrol: A Synthetic Estrogen.
8. Dr. Allen Whipple: Discussion of Papers.
9. Lunch, Hospital.

Friday, 1:30 p.m.

1. C. E. Hagyard: Carcinoma of Stomach.
2. H. E. Coe: Electric Burns of Lips in Infants.
3. R. H. Loe: Pancreatitis.
4. D. A. Murray: What is a Sprained Ankle?
5. Walter Kelton: Casts, Braces and Belts.
6. J. A. Duncan: Use of Various Defunctioning Operations Preparatory to Intestinal Surgery.
7. R. E. Mullarkey: Surgical Significance of Fecal Impaction.
8. Dr. Allen Whipple: Discussion of Papers.

Friday, 6:30 p.m.
Informal Dinner, Rainier Club
Address: Surgery of the Pancreas, Dr. Allen O. Whipple.

Saturday, 9:30 a.m.

1. Edward LeCocq: Treatment of Unreduced Colle's Fractures.
2. E. A. Nixon: Femoral Arteriovenous Aneurysm.
3. Hale Haven: Meningiomas of Sphenoidal Ridge.
4. A. B. Hepler: Neurogenic Tumor in Infant Producing Urinary Obstruction.
5. R. K. Plant: Pregnancy Following Interposition Operation.
6. Roger Anderson: Surgical Aspects of Backache.
7. O. A. Nelson: Siphon Drain for Suprapubic Cystostomy.
8. Dr. Allen Whipple: Discussion of Papers.
9. Lunch, Hospital.

Saturday, 1:30 p.m.

1. J. F. LeCocq: Marked Tibial Deformity (Case Report).
2. O. S. Proctor: Surgical Treatment of Gallbladder Disease.
3. J. F. Ramsey: Tendon and Nerve Suture.
4. H. B. Kellogg: Carcinoid Tumors of Small Bowel.
5. O. Lamson: Resection of Carcinoma of Rectosigmoid with End-to-End Anastomosis of Sigmoid to Rectum.
6. R. D. Forbes: Secondary Biliary Operations.
7. B. T. King: New Treatment for Postoperative Exophthalmos.
8. Dr. Allen Whipple: Discussion of Papers.

Saturday, 6:30 p.m.
Annual Banquet (Formal), Rainier Club
Address: Results of Decompression with Intestinal Intubation in Surgery of Intestinal Tract, Dr. Allen O. Whipple.

MEDICAL NOTES

Hospital Site Selected. Cowlitz County Commissioners have selected a site in Longview for the new $65,000 Cowlitz County hospital. The location is on property taken over by the county for delinquent taxes and offers convenient access from both Kelso and Longview. Bids for construction will be opened early in January.

Army Hospital in Vancouver. A seven hundred fifty bed cantonment type military hospital is to be built by the War Department at Vancouver Barracks. The new hospital will be used in connection with the present Vancouver Barracks hospital and will serve military personnel of the entire Northwest.

Tacoma Regulates Hospitals. City Council of Tacoma recently passed an ordinance requiring license for nursing and convalescent homes. According to the mayor this is part of a "general movement in the direction of better health control."

Addition at Western State. Contract has been let for construction of an addition to the laundry building at the Western State Hospital at Fort Steilacoom. Improvements are expected to cost $18,000.

County Acquires Nurses Home. Commissioners of Kitsap County have purchased residence property adjacent to the Kitsap County hospital, which will be used as a nurses' home. Former building used for nurses will be converted into a tuberculosis ward.

Hospital Staff Elects. Annual meeting of St. Elizabeth's hospital staff of Yakima was held November 29. W. Shuler Ginn was elected president, Herbert Lynch, vice-president, and W. B. Rew, secretary-treasurer.

Memorial Room Dedicated. A room in Pasco hospital has been dedicated to the memory of L. G. Spaulding of Kennewick.

Health Officer Selected. Chelan County commissioners recently appointed Paul West as acting health officer. He replaces G. R. Kingston, who has been called to active duty with the Army.

Seminar in Internal Medicine. Seattle General Hospital presented its annual Seminar in Internal Medicine December 26-28. The lecturer was Frank L. Horsfall, Jr., of Rockefeller Institute of New York City, son of Frank L. Horsfall who has practiced for many years in Seattle. Dr. Horsfall's subjects dealt with virus diseases, influenza, the pneumonias, chemotherapy and allied subjects. These lectures were among the most impressive and informative that have been delivered at these annual seminars. In addition to their outstanding superiority, Dr. Horsfall received an enthusiastic welcome from friends and admirers who have known him since the days of childhood in his native city.

Aid to Hard of Hearing. It is asserted that from 2 to 6 per cent of children of the state have hearing defects, often unknown to teachers who think they are stupid and unable to keep up with their grades. Many of these can be benefitted if their hearing defect is recognized. At the next session of the legislature additions to the school code will be introduced, requiring the testing of hearing of all children between the ages of six and sixteen years. School directors and county commissioners will be given power to provide funds for purchase or rent of audiometers to make suitable tests for defects in hearing. Here is an opportunity for doctors interested in benefitting children with defective hearing to promote passage of this act.

OBITUARY

Dr. Milton Ashby Nelms of Walla Walla died December 5, aged seventy-one. He received his medical education at Cooper Medical College, San Francisco, graduating in 1893.

WOMAN'S AUXILIARY

At the December meeting of Spokane County Auxiliary it was reported that it had 250 hours of Red Cross surgical dressings work to its credit. A unit of ten has been appointed to do this work. A $5 bond for the Spokane Antituberculosis League was purchased by the Auxiliary.

Clark County Auxiliary met with the Medical Society for dinner at its first meeting this fall. I. C. Munger, Jr., President of the Clark County Medical Society, gave a brief talk to the members on present day set-up of the medical profession in relation to the Army.

Yakima County Auxiliary members have been doing work with the Hospital Sewing Auxiliary in Yakima.

Mrs. George J. Vandenberg,
State Publicity Chairman.

UTILIZE SPEAKERS' BUREAU

The Speakers' Bureau of Washington State Medical Association, first established last year on a state-wide basis, has functioned with considerable success. The Committee on Postgraduate Medical Education and Hospitals, headed by A. B. Hepler, is again anxious that the many physicians who have volunteered their services be scheduled by the county medical societies for 1941. The subjects, with names of the speakers, will be published in alphabetical order in this and subsequent issues until all have been listed.

Requests for speakers should be made as far in advance as possible direct to the Committee on Postgraduate Medical Education and Hospitals, 218 Cobb Building, Seattle. The requests should state the name of the speaker and subject desired, with the name of an alternate choice. Requests should state the date, time, place of meeting and name of society or group; whether lantern slide projector is available, number of physicians expected to attend meeting and any other details which may be of interest to the speaker. Mimeograph forms for making requests may be had from the Committee, if desired. If travel or much loss of time is involved, it is expected that the speaker's expenses will be paid, if he so desires.

SPEAKERS AND SUBJECTS

Adams, A. O.; Medical-Dental Bldg., Spokane.

1. Use of Vitallium for Internal Fixation of Fractures of Long Bones.
2. Technic of Inserting Smith-Peterson Nail for Treatment of Fractures of Neck of Femur.
3. Technic of Transplanting Full-Thickness and Split-thickness Skin Grafts (a moving picture).
4. Treatment of Fractures of Shaft of Femur. (moving picture).
5. Examination of Upper Extremity for Injuries of Peripheral Nerves.
6. Suturing of Peripheral Nerves and Tendons.
7. Treatment of Case of Myasthenia Gravis with Prostigmine.
8. Treatment of Osteomyelitis.

Allen, Ralph Edgar; Medical-Dental Bldg., Seattle.
Problems of the Menopause.

Anderson, Leslie P.; Almira.
Tuberculosis: Diagnosis, Treatment, Case-finding, Prevention.

Anderson, Roger; Medical Dental Bldg., Seattle.

1. Office Treatment of Back Aches.
2. Treatment of Painful Soles.
3. Treatment of Fractures of Clavicle and Shoulder Injuries by Family Physician.
4. Ambulatory and Castless Method of Treating Shaft fractures of Extremities.
5. Nailing of Intracapsular Fractures of Hip; One-man Technic.
6. Fractures in the Region of Hip and Pelvis Treated by Well-Leg Method.

Aspray, Melvin; Medical-Dental Bldg., Spokane.
Radiation of Carcinoma of Cervix.

Backman, V. G.; Pasco.

1. Functional Disorders of Feet.
2. Problems and Methods of Abdominal Closure.
3. Surgical Emergencies During Pregnancies.
4. Medical Economics.

Bailey, Richard J.: Medical-Dental Bldg., Spokane.

1. Diagnosis and Treatment of Common Skin Diseases.
2. Recent Advances in Diagnosis and Treatment of Eczema.
3. Recent Trends in Treatment of Syphilis, Resulting from the Cooperative Clinical Group Studies.
4. Cutaneous Cancer and Precancerous Lesions.

Brown, Norman R.; Medical-Dental Bldg., Spokane.

1. Low Back Conditions (Orthopedic).
2. Scoliosis.
3. Tuberculosis of Bone and Joints.
4. Congenital Club Feet; Particular Reference to Treatment.
5. Fractures; Particular Reference to Emergency Care.

Brookbank, E. B.; Medical-Dental Bldg., Seattle.
Obstetric Subjects as Requested.

Brugman, Joe; Stimson Bldg., Seattle.

1. Foot Troubles Due to Shoes.
2. Fractures Around Ankle Joint.

Campbell, M. Madison; Stimson Bldg., Seattle.

1. Psychiatry.
2. Psychotherapy.
3. Psychoneuroses, Treatment.
4. Neurology; Diagnosis and Treatment.
5. Neurosyphilis and Treatment.
6. Mental Hygiene.
7. Child and Adult Guidance.

Campbell, Robert A.; Stimson Bldg., Seattle.

1. Treatment of Postoperative Pneumonia by Aspiration.
2. Sulfanilamide Therapy of Infections of Ear, Nose and Throat.

Cantril, Simeon T.; 1211 Marion, Seattle.

1. Radiation Therapy.
2. Management of Cancer of Uterus and Cervix.
3. Treatment of Cancer of Pharnyx and Larynx.
4. Use of Irradiation in Treatment of Inflammatory Diseases.
5. Bone Tumors.

Capaccio, George D.; 1115 Terry Avenue, Seattle.

1. Diabetes Mellitus, All Phases.
2. Heart Disease, All Phases.

Capell, H. J.; Larson Bldg., Yakima.

1. General Medical Subjects.
2. General Surgical Subjects.

Carlson, C. C.; Medical Arts Bldg., Tacoma.

1. Practical Considerations in Psychoses.
2. Common Neurologic Syndromes.
3. Understanding of Neurotic Manifestations.

Baker, Joel W.; 1115 Terry Ave., Seattle.

1. Surgery of Carcinoma of Colon and Rectum.
2. Surgery in Peptic Ulcer. (Gastric and Duodenal.)
3. Carcinoma of Breast.
4. Surgery of Biliary Tract.

Bannick, E. G.; Medical-Dental Bldg., Seattle.
Diagnosis and General Medicine. Subjects as requested.

Barnett, E. J.; Medical-Dental Bldg., Spokane.

1. Child Psychology.
2. Immunizations.
3. Acute Nephritis in Children.
4. Rheumatic Fever of Childhood.
5. Woodtick Paralysis in Children.
6. Review of Recent Advances in Pediatrics.

Benson, R. A.; Bremerton.
Clinical Photography in General Practice.

Berens, S. N.; 902 Boren Ave., Seattle.

1. Epilepsy. Diagnosis and Treatment.
2. Head Injuries.
3. Diagnosis and Treatment of Ruptured Intervertebral Disc.

Blackman, James; Cobb Bldg., Seattle.

1. Diagnosis and Treatment of Postoperative Pulmonary Complications.
2. Diagnosis and Treatment of Primary Bronchogenic Carcinoma.
3. Relation of Bronchopulmonary Segment to Prognosis and Treatment of Pulmonary Abscess.

Bowers, James M.; Stimson Bldg., Seattle.

1. Diagnosis and Medical Treatment of Conditions of Esophagus, Stomach and Colon.
2. Medical Treatment of Peptic Ulcer.
3. Classification of Biliary Tract Diseases and their Medical Treatment.
4. Incidence, Diagnosis and Treatment of Diabetes Mellitus.
5. Diagnosis and Treatment of Anemias and Leukemias.
6. Consideration of Problems of Aged.

Boyce, Allen; Medical-Dental Bldg., Spokane.

1. Obstetrics.
2. Gynecology.

Clein, Norman W.; 1155 10th No., Seattle.
1. Health and Medical Advertising, Good and Bad.
2. Allergy.
3. Infant Feeding and Nutrition of Children.
4. Newer Developments in Pediatrics.

Coe, Herbert E.; Medical-Dental Bldg., Seattle.
1. Appendicitis in Children.
2. Basal Anesthesia in Children's Surgery.
3. Congenital Defects of External Ear.
4. Congenital Atresias of Alimentary Canal.
5. Cleft Lip and Palate, Hereditary Factor.
6. Cleft Lip and Palate, Preoperative Treatment and Sequence of Operations.
7. Treatment of Syndactylism.
8. Inguinal Hernia in Infants and Children.

Congdon, R. T.; Wenatchee.
Spondylolisthesis. Its Occurence in Skeletons of Prehistoric Indians and Clinical Application.

Corlett, Donald D.; Stimson Bldg., Seattle.
1. Urologic Lesions.
2. Strictures of Ureters.
3. Renal Ptosis.

Davidson, C. F.; American Bank Bldg., Seattle.
1. Endocrinology in Modern Practice.
2. Carbohydrate Metabolism. Deviations from Normal with Associated Clinical Manifestations.
3. Endocrines in Gynecology.
4. Endocrines in Development, Growth and Nutrition.
5. Thyroid Problem as Seen in Endocrine Clinic.

Davidson, H. J.; American Bank Bldg., Seattle.
1. New Procedure for Completing Operation after Pylorectomy.
2. Results of Seventy-five Cases of Duodenoejunostomy.
3. Plus Appendix Operative Approach and Immediate Postoperative Care.
4. Practical and Effective Treatment of Eclampsia Which Can Easily Be Carried Out In the Home.

Dayton, M. D.; Medical Arts Bldg., Tacoma.
1. Pediatrics.
2. Suggested Subjects.

Dempsey, G. R.; Medical-Dental Bldg., Seattle.
Obstetric Subjects as Requested.

Dodds, Gordon A.; Medical-Dental Bldg., Seattle.
Pentothal Sodium Anesthesia as Primary or Supplementary Anesthetic Agent.

Dorman, Purman; Stimson Bldg., Seattle.
Eye Subjects Only.

Douglass, Frank H.; Medical-Dental Bldg., Seattle.
1. Child Behavior.
2. Immunization.
3. Some Fundamentals of Child Surgery.

Dowling, J. T.; 1115 Terry Avenue, Seattle.
1. Iritis.
2. Mastoiditis In Children.
3. Refractive Errors In Children.

Dudley, Homer D.; Cobb Bldg., Seattle.
1. Treatment of Severed Nerves and Tendons of Hand.
2. Treatment of Wounds, Primary and Infected.
3. Acute Lymphangitis of the Hand; Diagnosis and Treatment.
4. Reconstructive Surgery of Hand.
5. Tumors of Hand.

(To be Continued)

IDAHO STATE MEDICAL ASSOCIATION

1893

FORTY-NINTH ANNUAL MEETING, SUN VALLEY, JUNE 18-21, 1941

MEDICAL NOTES

New Hospital Opened. Last month at Moscow the new Gritman Memorial Hospital was opened for inspection. It is a three story, brick building of fireproof construction erected at a cost of $105,000. Its construction was made possible by generous contributions from physicians and other interested citizens, and is a memorial to Dr. Gritman, well-known and beloved pioneer physician. This hospital will prove a great addition to the welfare of the city of Moscow and Latah County.

A Meeting of the Council was held in Boise, December 6. H. L. Stowe of Twin Falls was appointed a member of the State Program Committee and Maternal Welfare Committee, in place of J. N. Davis. F. N. Cole of Caldwell was appointed permanent chairman of the State Committee on Medical Preparedness.

Hospital Work Completed. Two floors have been added to the original wing of St. Joseph's hospital, Lewiston, and the addition was put to use shortly after the first of the year. $20,000 was expended in making improvements.

Hospital Enlarged. Lakeside hospital at Coeur d'Alene is undergoing extensive remodeling and enlargment. Its capacity is being increased from fifteen to thirty-five beds. The hospital was originally built in 1929 and its enlargement will fill a long-felt need in Coeur d'Alene.

Physician Addresses Miners. Max T. Smith of Wallace addressed a recent convention of mining men in that city on the subject of silicosis.

R. A. Goodwin of Emmett has been called to active duty in the army.

OBITUARY

Dr. Charles F. Zeller of Jerome died December 1 at Rochester, Minnesota, aged sixty. He had practiced in Idaho since 1909. He received his medical education at University Medical College, Kansas City, Missouri, graduating in 1903. After his interneship he went to Alamos, Mexico, where he practiced for four years. He settled in Shoshone in 1909 and moved to Jerome in 1918.

He was at one time president of the South Side Medical Society and also of Idaho State Medical Association. For twenty years he had been Republican county chairman and state committeeman. He was a former president of Jerome Chamber of Commerce, was active in Southern Idaho, Inc., and was chairman of the Jerome highway district board.

SOCIETY MEETINGS

BONNER-BOUNDARY COUNTIES MEDICAL SOCIETY

The monthly meeting of the Bonner-Boundary Counties Medical Society was held at the home of C. C. Wendle, Sand Point, December 5. Guest speaker was Robert Pohl of Spokane.

BOOK REVIEWS

Abdominal Operations. By Rodney Maingot, F.R.C.S., Eng., Senior Surgeon to the Southend General Hospital, and to the Royal Waterloo Hospital, London, etc. Vols. I and II, 1385 pp. Two Vols. $18. D. Appleton-Century Co., Inc., New York and London, 1940.

These two volumes adequately cover the recognized field of abdominal surgery exclusive of gynecology. Such a work is always a courageous undertaking because low mortality in abdominal surgery is dependent so frequently upon minute detailed application of sound surgical principles, and to consult a treatise is to hope for aid in every detail pertinent to the suspected disease. The author has not failed us. His familiarity with both American and British surgery has enabled him to give the best of each, while writing more particularly for the American surgeon.

We have here a most satisfactory consideration of all important facts relating to pathology, diagnosis, operative procedures with their dangers and difficulties, and preparation and aftercare of the patient. Discussion is never sketchy. The illustrations are abundant, pleasing to the eye and faithfully portray steps of operation. Original drawings are by Miss Pauline Lariviere, a pupil of Max Brödel. One finds this work to be uniformly authoritative and eminently reliable as a reference in modern abdominal surgery. R. D. Forbes

The Practice of Medicine. By Jonathan Campbell Meakims, M.D., Ll.D. Professor of Medicine and Director of the Department of Medicine, McGill University, etc. Third Edition. With 562 Illustrations Including 48 in Color. 1340 pp. $10. The C. V. Mosby Co., St. Louis, 1940.

This book is divided into twenty-one chapters. Those given prominence are on diseases of circulatory system, the gastrointestinal tract, the nervous system, the larynx, bronchial system and lung, and the hemopoietic system.

The timely, intensive thoroughness which characterizes the whole work is seen in handling disturbances of the conducting mechanism, valvular and myocardial lesions, together with the excellent discussion of diseases of blood vessels.

The chapter on diseases of the gastrointestinal tract, although comprehensive and beautifully done, does not show the same degree of sparkling devotion and love for detail as in the chapter on diseases of the circulatory system. The gastrointestinal approach covers esophagus, stomach, small and large intestine. The mechanisms of the hepatic and biliary fuctioning portrayed bring us closer to a realization that only the cells of the cerebral cortex surpass in functional ability those of the liver. The timely handling of the pneumonias in discussion of type specific antitoxic sera and chemotherapy is comforting to the man who must act in the presence of these entities.

Bone marrow, erythrocytes and leukocytes are discussed and beautifully portrayed. Chlorosis, secondary and pernicious anemia are thoroughly covered. The leukemias and neutropenia are presented and through all appears a series of marvelously colored plates of typical blood pictures. Other excellent chapters appear on diseases of the nasopharynx, urinary system, nervous system, ductless glands and on nutrition and allergy. Careful evaluation of this beautiful accomplishment is recommended to those interested in the practice of medicine. C. H. Hofrichter

The Treatment of Diabetes Mellitus. By Elliott P. Joslin, A.M., M.D., Sc.D., Clinical Professor of Medicine Emeritus, Harvard Medical School, etc., Howard F. Root, M.D., Instructor in Medicine, Harvard Medical School, etc., Priscilla White, M.D., Instructor in Pediatrics, Tufts College Medical School, etc., Alexander Marhle, A.M., M.D., Physician, New England Deaconess Hospital, etc. Seventh Edition, Thoroughly Revised, Illustrated. 783 pp. $7.50. Lea & Febiger, Philadelphia, 1940.

This large volume is not only a practical guide to modern treatment for the student or general practitioner as well as the specialist, but is so complete in reference to and extraction of world literature that it constitutes a veritable library of the subject. One outstanding feature is strict adherence to orthodox methods. While not ultraconservative in their attitude, the authors give pointed encouragement to new thought when based upon scientific fact, and yet they repeatedly sound warnings against new ideologies which ignore the lessons of the past or fail to look judiciously into the future.

Because arteriosclerosis as a cause of death of the diabetic has risen three-fold and occupies such a major position, much attention has been given this in the chapter on cardiovascular disease. Forty pages cover important data on diabetes in childhood and pregnancy in the diabetic. The senior author has written in his inimitable manner the chapters which pertain to the most practical aspects of the subject, such as diet, diagnosis, prognosis and insulin. Directions for treatment are clear and definite. When a physician assumes the responsibility involved in diagnosis and treatment of diabetes, he will discharge his duty in a more efficient manner if he keeps this volume at hand and studies it. L. J. Palmer

Synopsis of Materia Medica, Toxicology and Pharmacology, for Students and Practitioners of Medicine. By Forest Ramon Davison, B.A., M.Sc., Ph.D., M.B., Assistant Professor of Pharmacology in the School of Medicine, University of Arkansas, Little Rock. With 45 Illustrations, Including 4 in Color. 633 pp. $5.00. The C. V. Moshy Co., St. Louis, 1940.

The author states that pharmacology is an integral part of medicine, and there should be a judicious limitation of subject matter consistent with its importance in the field of medicine. He believes that many newer products do not replace those preparations whose composition and therapeutic results have been established over a period of years. Classification of drugs is simplified, based on their therapeutic activity and their site of action. Throughout the volume are presented prescriptions of merit for certain conditions.

Following chapters on materia medica, prescription writing and toxicology, are discussions of drugs acting on skin and mucous membranes and on the gastrointestinal tract. Drugs are described acting on the central, peripheral, parasympathetic, cerebrospinal and nervous systems. Each drug is discussed as to its pharmacologic action, toxicology and therapeutic uses. There are a number of chapters dealing with biologicals which consider vitamins with mode of action and clincal significance of each, serums, vaccines and hormones. A mass of valuable information is contained in this volume.

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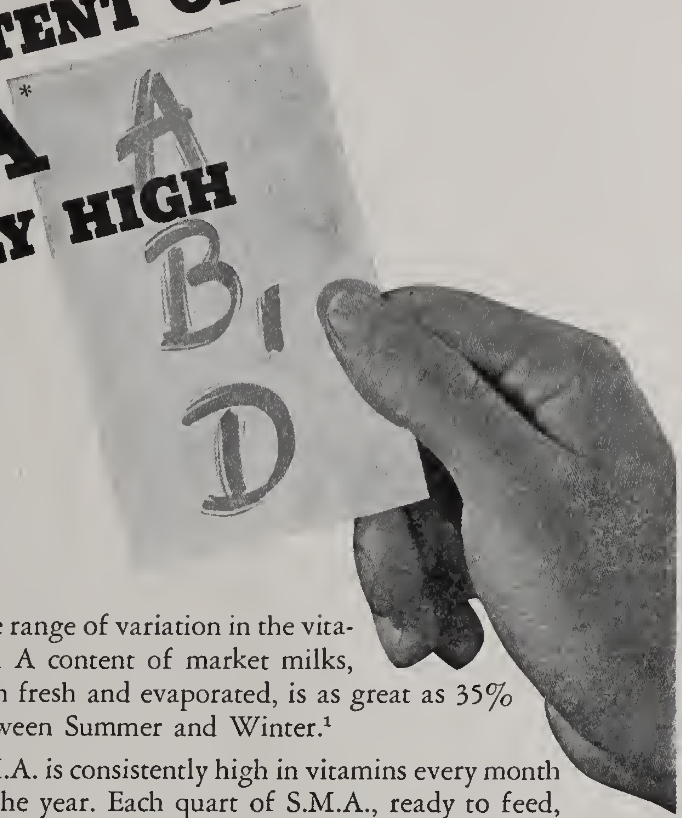

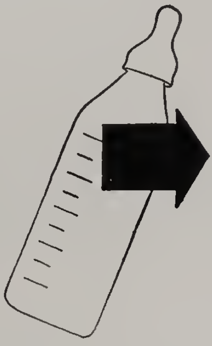

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[1] Dornbush, A. C., Peterson, W. H., and Olson, F. R.: "The Carotene and Vitamin A Content of Market Milks." J.A.M.A., May 4, 1940, pp. 1748-1751.

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METHODS FOR DIAGNOSTIC BACTERIOLOGY. By Isabelle G. Schaub, A.B., Assistant in Bacteriology, The Johns Hopkins University School of Medicine, and M. Kathleen Foley, A.B., Bacteriologist in Charge of the Diagnostic Bacteriological Laboratory of the Medical Clinic, The Johns Hopkins Hospital. 313 pp. $3.00. The C. V. Mosby Company, St. Louis, 1940.

"What does the culture show?" is one of the most frequent queries in diagnostic procedures. The contents of this volume represent technic employed in the Biological and Autopsy Bacteriology laboratories of the Johns Hopkins University School of Medicine. Explicit directions for handling clinical and autopsy material are detailed, and in five chapters are given directions for identification of organisms which are commonly encountered in medical bacteriology. Under serological diagnosis are given instructions for identification of organisms and study of patients' sera. Following this are chapters on media, stains, reagents and tests. There is an abundance of blank pages for the insertion of notations and observations. This book should prove helpful to the student or physician engaging in diagnostic bacteriology.

DISEASES AFFECTING THE VULVA. By Elizabeth Hunt, B.A., M.D., Ch.B. (Liverp.). Honorary Physician to the Skin Department, South London Hospital for Women, etc. With 36 Illustrations and 18 Plates in Color. 215 pp. $4. The C. V. Mosby Co., St. Louis, 1940.

This text is of particular interest to the gynecologist, the author being a dermatologist. It emphasizes the necessity of cooperation between the two specialties in diseases affecting this particular area. To a gynecologist it is rather overwhelming, when one considers the number of diseases that can affect the external genitalia. One encounters only a few of these in a lifetime of gynecologic practice so the volume is invaluable from a reference standpoint.

Descriptions are complete and clear-cut and the color plates are characteristically good. There is a chapter devoted to the more common parasitic infections with which we are all familiar, but in which treatment is still more or less nonspecific. The chapter on vaginal and intestinal organisms deals with the ever present trichomoniasis infection but there is nothing new in the treatment. One would say that the book is excellent for reference in that it is complete, well written and well illustrated. C. M. HELWIG

LET'S TALK ABOUT YOUR BABY. By H. Kent Tenney, Jr., M.D., F.A.A.P., Associate Professor of Pediatrics, University of Wisconsin Medical School, etc. 115 pp., $1.00. The University of Minnesota Press, Minneapolis, 1940.

The most important event in family life is appearance of the first baby. The mother is full of curiosity and anxiety as to what and how she should attend to the ever-varying needs of the newcomer. This little volume answers many of these questions. It is written in a jovial, conversational style which is intended to cheer as well as enlighten the mother. Many questions are answered which appear very simple to the doctor and the mother-in-law, but are real problems to the young mother. Useful suggestions are presented covering many phases of the baby's first two years of life.

THE 1940 YEAR BOOK OF PATHOLOGY AND IMMUNOLOGY. Pathology edited by Howard T. Karsner, M.D., Professor of Pathology, Western Reserve University, Cleveland; Immunology edited by Sanford B. Hooker, A.M., M.D., Professor of Immunology, Boston University School of Medicine, etc. 688 pp. $3.00. The Year Book Publishers, Inc., Chicago, 1940.

The editor of Pathology states his book is designed not merely for the professional pathologist, but also for practitioners realizing that pathology is fundamental in the intelligent enlargement of their special horizons. Discussions of various pathologic conditions are presented briefly and concisely. After consideration of pathology of tumors there are presented pathologic conditions in various systems, as cardiovascular, hematopoietic, respiratory, urinary, nervous. Special chapters consider the alimentary tract, organs of locomotion, glands of internal secretion. In another chapter there is a brief consideration of technical methods.

The editor of Immunology states his desire to provide a fairly general survey of the wide variety of topics having immunologic interest. For the sake of brevity he confines his discussion to certain fields being diligently cultivated by many workers. Under immunity to bacterial diseases are considered fourteen conditions discussed alphabetically, beginning with anthrax and brucellosis and ending with tuberculosis and typhoid fever. Specific discussions offer the essential facts under each. The chapter on anaphylaxis and allergy is followed by discussions under immunochemistry of microbial and nonmicrobial antigens and antibodies. This volume offers the essential features of many fascinating discoveries of recent years.

OBSTETRICS IN GENERAL PRACTICE. By J. P. Greenhill, B.S., M.D., F.A.C.S., Professor of Obstetrics and Gynecology, Loyola University Medical School, Chicago, etc. 448 pp. $3.50. The Year Book Publishers, Inc., Chicago, 1940.

This book is based on the author's experiences during twenty-two years of practice and presents facts employed by the obstetrician in the ordinary round of general practice. Its thirty-seven chapters deal with common experiences and present useful suggestions for the average practitioner. The majority of deliveries in this country are made by the family physician. He should be familiar with the requirements for ordinary obstetric practice which are acquired through years of experience. He will find them outlined in this volume.

THE NEW INTERNATIONAL CLINICS. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. Volume IV, New Series Three. 326 pp. $3. J. B. Lippincott Company, Philadelphia, 1940.

This volume contains papers and clinical reports on many important and useful topics. Among them are several discussions of heart conditions, including Ewart's sign, convallan in cardiac therapy, heparin: its use in the treatment of subacute endocarditis, treatment of a number of paroxysmal conditions, coronary occlusion. There are others dealing with intestinal and pulmonary conditions, all of which are informative and pertinent.

NORTHWEST MEDICINE

THE JOURNAL OF THE STATE MEDICAL ASSOCIATIONS OF OREGON, WASHINGTON, IDAHO

ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION

Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879. Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 3, 1917, authorized July 31, 1918.

Vol. 40, No. 2 FEBRUARY, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Reprints will be furnished by the printer according to the schedule of prices which accompanies the galley proofs submitted to the author. The order for reprints should accompany the returned galley proofs. The printer holds the type until the first of the following month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

PUBLIC RELATIONS

Would you like to know what an able public relations man has to say about the medical profession and its possibilities; what an unbiased observer who has watched us with interest for a number of years really thinks? If so you will be interested in the following which is a reasonably accurate record of a statement made recently by the public relations counsel of one of the largest business organizations in the Northwest. Substantially he spoke as follows:

"You people have the most favorable position in the world for fine public relations work, yet you have failed to even scratch the surface of your possibilities. You have the most intimate and personal contact with your patients, and as individuals you are given the maximum of admiration, respect and even love. Yet as an organization you are generally hated and feared. Your efforts and methods are misunderstood, your principles and ethics are considered nefarious schemes for your own protection, your organizations are thought to be hidebound and reactionary.

"Practically no one escapes sickness at some time or other in his life. Therefore, one of you has touched closely the life of nearly every living person. What a magnificent opportunity that is. Your public relations job begins at home. It belongs to each of you and you must learn that it is just a part of your daily routine. You and I know that the medical profession is sincerely and honestly interested in protecting the health of the public. You must take that conception of the profession to your patients.

"There is no mystery about public relations work. It is as simple as sitting down to dinner with a fellow you have spoken to for years but really never gotten acquainted with. You might have had your suspicions about him and might even have disliked him a little. But after a meal together and a little discussion of current happenings you find that he has a fairly good grasp of affairs and that many of his views coincide exactly with yours. In fact, he's quite a decent fellow. Public relations work is like that. It simply amounts to letting you see the truth about the other fellow and the unfairness of a few of your preconceived ideas about him.

"One of the first jobs I had in the Northwest was with the situation regarding one of our branch offices in a Washington city of about three thousand population. The general feeling was that the business took local money out of the city, that the manager was a stranger and that we were there simply for the cash we could get out of that community. A little study showed, among other things, that the manager was indeed a stranger and that after office hours he was seldom seen mixing with the people of the town. The remedy was clear. It did not consist of an advertisement in the paper or a poster in front of our place of business. It simply consisted in asking the manager to contribute to the local charities, join a few local organizations and attend as many community functions as possible. It wasn't long until nearly everyone in town knew our manager personally and knowing him learned to like him and then decided that his organization might not be as bad as they at first believed. Today our business is one of the most popular in that town.

"You, too, can change the attitude of the public toward your profession if you will first study the situation from the public's standpoint and then as individuals apply the necessary remedies. I am sure you will in the long run find them quite simple."

MENACE OF PORNOGRAPHIC LITERATURE

It is the wish and objective of parents, teachers and all concerned with training youth that our boys and girls should be reared on principles of virtue, rectitude and an honorable mode of life. Many people do not realize to what an extent these worthy ambitions are thwarted by vicious literature exposed for sale on our news stands. One only needs a glance at the lurid display of magazines, garbed in all colors of the rainbow and adorned with suggestive illustrations, to be convinced of the menace to which the youth of the land is exposed. This appalling evil has been featured by Charles J. Dutton[1] who has had extensive experience as probation officer and in personal contact with youths and men on parole and confined in prisons.

He states that out of almost a hundred covers, gaudy in reds, blues, yellows and greens, two-thirds deal with sudden deaths depicted with guns, daggers, airplanes, poisons and weird machines as evil weapons. The contents deal largely with crime and methods of its execution. These tales of violence are directly connected with sexual excesses. Many of them describe sexual indulgences in detail. They play up sordid sex relations as glamorous, one being described which depicted the technic of seduction, even describing drugs and how to use them to promote the youth's nefarious intentions. It is said to be a poor yarn that does not describe several killings, making heroes of the perpetrators, accompanied by an incredible amount of drinking and various criminal procedures. Chastity is discredited in many of these tales, with emphasis on the fact that female virtue does not exist, and any girl can be seduced by employing suitable procedure.

Who purchase and read these magazines? The average age of the buyer is said to be from sixteen to thirty, with almost as many women as men buyers. It is well known that crimes against women and children are increasing in America, with a preponderance of sex criminals. Unquestionably, circulation of these magazines glorifies sordid sex relations as alluring. The author has had a wide experience in dealing with youths and men on parole who are avid readers of these magazines and believe the tales to be true. Another deplorable feature is the sadistic streak in many of these stories, violence and cruelty being depicted in an attractive manner to register on the impressionable minds of youth.

The writer calls attention to the tremendous sale of these magazines. In a certain month one of them sold more copies than *Atlantic Monthly* would sell in a year. It is stated that "their total monthly sale was greater than that of *Harper's, Atlantic Monthly, Scribner's, The Forum* and *American Mercury* would be during the next five years." Here is where you will find the best sellers, not in high class literature. It is stated that recently Australia banned sixty-four of these American magazines which are among our best sellers. Many of them are not allowed to be sold in Canada. None of these crime magazines would exist in our country unless people bought them, and their sale depicts a deplorable condition of American mass reading, a vast number of our youths reading this vicious literature exclusively.

Naturally follows the query, why are our youth exposed to this menace? There are existing laws that could control the situation, but apparently the American abhorrence of censorship prevents the banning of this vicious literature. Recently it was announced that Mayor La Guardia of New York had publicly melted a huge collection of questionable copper engravings which would be used for defense measures, after the sentencing of a publisher of ten such magazines to ten days in the workhouse and $100 fine.

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[1] Dutton, C. J.: Death on the News Stands. Advance, 133: 17-19, Jan., 1941.

It seems this stimulation of increasing crime through sale of pornographic literature has not received the publicity which it deserves. The medical profession might well devote some of its energies to help suppress this evil.

LEGISLATIVE MEDICAL ENACTMENTS

Since our legislatures are now sitting in their biennial sessions, it is expected that bills will be presented bearing on medical practice. Whether few or many in number, mild or drastic, time alone will tell. Medical bills introduced before the legislature ordinarily come under two headings. Philanthropic reformers, who claim their purpose is to promote the good health of the people, are fond of formulating bills of a more or less revolutionary character bearing on medical practice. It is commonly their aim to set up new basic principles regarding the relations of physicians to their patients, various phases of state medicine generally being favored. The second class of bills is fostered by individuals seeking advantage for themselves or a group of their associates, and aiming to repeal or alter medical practice acts and establish personal favors. It is well known that these two classes of medical bills appear in all legislative sessions.

The anxiety as to federal medical enactments has greatly subsided for the time being. With termination of the last congressional session all medical bills that had not been enacted went into the discard, automatically meeting a timely death. Thus has terminated agitation which acutely upset the medical profession during many recent months. The importance of depending on physicians to supervise and maintain the health of enlisted men during the present period of preparedness has emphasized the necessity of maintaining medical practice under existing conditions. It would be reasonable to expect a subsidence for the time being of the attacks upon medical practitioners which have bulked so large in recent years. What may follow when war has ceased and peace rules the world is something which no one can foretell. There is only one course to be followed by the medical profession. Every physician must pursue practice faithfully, conscientiously, with the purpose of doing his duty to his own clientele and the nation.

ORIGINAL ARTICLES

USE OF AVERTIN IN ELDERLY UROLOGIC PATIENTS*

Ronald C. Romig, M.D.
and
Charles D. Donahue, M.D.
Eugene, Ore.

In presentation of this subject we readily appreciate the fact that most anesthetists and surgeons are quite ready and willing to debate the merits of different types of anesthesia. The anesthesia of choice in one given instance would be that drug or drugs with which the anesthetist would be most familiar, and as the procedure becomes more specialized it would also depend upon the type of patient on whom it is to be used.

Avertin, or tribomethyl alcohol, was first presented in 1925 before the Surgical Society of Berlin by Butszengeiger[1]. During and shortly after that period an attempt was made to completely anesthetize patients, with the result that many unfavorable reports followed in the use of this drug. In a review of some of the literature wherein it has been used in thousands of cases, there has been little said concerning the use of avertin in those of advanced age. It is with this thought in mind we present this review of two hundred cases, in which avertin was used without a single fatality attributable to the anesthetic. It must be borne in mind that we are dealing with many who were considered only fair or poor surgical risks.

Avertin has not been used routinely in all of our cases, nor have we selected these for this presentation, but had the histories drawn from the record room in routine order. All records of patients under fifty years of age were rejected, since this is to be a review of patients of advanced age subjected to avertin used as a basal anesthesia. It must be conceded that any individual reaching the age of fifty has passed his peak of physical perfection and is on the decline.

Undoubtedly in this group there were many who had minor or major heart changes, such as chronic myocarditis and coronary disease. There were those in the more advanced group who must have had liver damage and biliary involvement. We do know there were many who had renal changes as evidenced by chronic hydronephrosis with some current involvement of the renal cortex. There were in this group a number of patients suffering from hypertensive cardiovascular-renal disease of greater or less severity. In any event, this group was fairly representative of poor surgical risks subjected to avertin as basal anesthesia.

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*Read before the Sixty-sixth Annual Meeting of Oregon State Medical Society, Eugene, Ore., Sept. 4-7, 1940.

[1] Butzengeiger, O.: Klinische Erfahrungen mit Avertin (E-107). Deutsche med Wchnschr., 53:712, April 22, 1927; Hall.

One of us (C.D.) has been impressed with the decided fear many of this age group have of inhalation anesthesia. Invariably the question is asked, "doctor, what kind of anesthesia do you use, do I have to take ether or gas?," and on being informed that a rectal anesthesia would be used the question is immediately dismissed.

The method of procedure varies some in different institutions but in the main it is essentially the same. A light meal may be had the evening before, and if ambulatory, the patient is admitted in the late evening in time for preparation of the surgical field. In most instances all laboratory work is completed the day before the admittance to the hospital. The weight is recorded on the chart along with blood pressure, pulse, temperature and respiration. As a rule, warm tap water should be used for the evening enema and the lower bowel thoroughly evacuated. Occasionally one is seen where soapsuds is irritating to the mucosa of the rectum and colon. All irritating substances used as rectal injections should be avoided before avertin is administered. Purgatives should not be given within twenty-four hours preceding the admittance to the hospital.

If there is decided apprehension or nervousness and it is quite evident the patient will not sleep, phenobarbital may be given in the evening. With the exception of two cases, all received preoperative hypodermics of morphine varying from 1/4 to 1/6 gr. or dilaudid from 1/20 to 1/32 gr. We now feel, as has been pointed out by others, that the combined depressing effect of avertin and the opiates on the respiratory centers is too pronounced to justify their use. Occasionally we found this to be true where avertin in 60 mg. doses was given. In Woodson's[2] series of 1000 tonsillectomies, where 75 to 80 mg. were used, he not only decreased the dose but abandoned the use of opiates as preoperative hypnotics.

Relative to dosage we quote Bernheim, Light and Livingstone[3]. They do not base the dose of avertin totally on body weight as this is not deemed satisfactory. It is necessary to consider age, general resistance, fatty tissues, and the presence of disease must be considered. Woodson uses a scale of 70 mg. for three to five years of age, 80 mg. for a healthy adult, 60 mg. for those past fifty and 60 mg. for the obese patient. Obese patients do not seem to tolerate large doses as well as those of average weight. Those in extreme age brackets, such as the late seventies and eighties, are never given more than 60 mg. per kilo.

The dosage in our series is fairly well outlined in the summary of ages, where avertin was supplemented with other anesthesia. In the fifth decade, or those between fifty and sixty, fourteen received avertin plus ether, ten avertin with nitrous oxide, one avertin with ethylene, and nine avertin alone. In this group there were thirty-four anesthetics administered to thirty patients. The doses ranged from 60 mg. to 90 mg. per kilo. In only two instances was the 90 mg. dosage used. In the sixth decade, twenty-nine received avertin and ether, twelve avertin and nitrous oxide, and forty-eight avertin alone. In this group there were eighty anesthetics and seventy-five patients. For those of the age of eighty and more, one received avertin plus ether, seven avertin and nitrous oxide, and three avertin alone. There were eleven anesthetics and ten patients. The average dosage in this group was 60 mg. or less per kilo.

Preparation of the solution is fully outlined in the form sheet accompanying the avertin, and should be followed to the letter. The solution should be allowed to run in slowly to avoid some of the liquid being expelled or too rapid absorption. If any solution is expelled, it is decidedly unsafe to supplement what has been lost for fear that an overdose will be given. It has been pointed out by Hall[4] that avertin is absorbed by the bowel and cannot be recovered within ten minutes after it is given, although the distilled water will still be there. So absorption starts immediately, even though a major portion has been expelled.

The room should remain quiet after the avertin is administered and the patient then transferred to the surgery after twenty to thirty minutes have elapsed. In many instances we have transferred the patient immediately after the avertin was given, and even though he is able to move himself from the bed to the stretcher and from the stretcher to the operating table, he will have no recollection of the events that have transpired.

In selection of cases, we have been a little fearful of those with marked hypertension. The initial drop in blood pressure is usually 20 to 30 mm. and is even more pronounced in the hypertensive case. Hypotensive cases are more likely to tolerate the drug than the hypertensive. Moderate kidney and liver damage is not a contraindication. Pangman[5] states that each molecule of avertin is paired with a molecule of glycuronic acid. Thus it is detoxified before it is excreted by the kidneys. This action is not retarded by a liver that is not too severely damaged. Apparently there is no reason why it should not be used in unilateral kidney diseases. Sir Frances Shipway (quoted by Pangman) performed fifty-three nephrectomies under avertin, supplemented with nitrous oxide or ether. Three patients died: one on the fifteenth postoperative day from pulmonary embolism, one on the fourth postoperative day due to peritonitis proved at autopsy, and one in thirty hours from circulatory failure. This patient was sixty-four years old and very toxic in consequence of a long-standing pyonephrosis. In forty cases the kidney was operated on for removal of calculi. There were no fatalities.

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[2] Woodson, F. E.: One Thousand Tonsillectomies Using Avertin as Basal Anesthesia. Anesth. & Analg., 18:161-163, May-June, 1939.

[3] Bernheim, M. J., Light and Livingstone: Avertin: Its Conservative Employment with Satisfactory Results. Anesth. & Analg., 17:54-59, Jan.-Feb., 1938.

[4] Hall, J. W.: Practical Administration of Avertin. New Zealand M. J., 31:75-79, April, 1932.

Anschulz (quoted by Pangman) operated on forty jaundiced patients using avertin. In a recent letter he states he has good results, even where the bilirubin figure was four times normal. He has completely given up ether for patients with severe jaundice. Pangman had five cases following acute cholecystitis; one of ruptured gallbladder, one subjected to two major operations within six weeks in the presence of jaundice and albuminuria, and cases with hypertension with no untoward effects. These are extreme cases, and we quote them to show the relative safety of the drug, if one wishes to use avertin in moderate liver damage.

Patients with severe liver damage undoubtedly should not be subjected to this type of anesthesia. Colitis and ulceration of the lower bowel are distinct contraindications, as there is likely to be too rapid absorption of the avertin. It is contraindicated in drug addicts, the severely emaciated and debilitated patients, and if given at all it should be in small doses.

We do not feel that extreme age is a contraindication, for in our series there were ten in the eighth decade who were anesthetized in this manner without a fatality. Probably the oldest patient subjected to prostatectomy is the one reported by Clark.[6] This patient was one hundred and ten years of age, and avertin was used as a basal anesthesia; the patient recovered. In our series, in the fifth decade there were thirty, the sixth eighty-five, the seventh seventy-six, and in the eighth ten.

Induction of sleep after injection of avertin is remarkably smooth. There is no excitement stage and the patient gradually relaxes and lapses into sleep without a struggle. As has been stated, there is variation in the blood pressure, either initial rise or preliminary drop of 20 to 30 mm. of mercury. In Pangman's series there was a rise of 11 per cent upward to 20 mm.; in 52 per cent there was no appreciable change, and in 37 per cent the blood pressure fell, ranging to 20 mm.

Blood pressure should be recorded every few minutes, and if it continues to fall the following stimulants or antidotes may be used: (1) coramine, 2 cc. intramuscularly or intracardiac; (2) metrozol, 1 cc. intramuscularly; (3) cocaine, 2 cc. one-half per cent intramuscularly; (4) caffeine and sodiobenzoate, 2 cc.; (5) carbogen; (6) ether; (7) instrumentation; (8) ephedrine; (9) artificial respiration. When necessary, we have used ephedrine, carbogen, oxygen and artificial respiration. There has been no case where intracardiac injection has been found necessary. In all cases where there was evidence of respiratory failure, the pulse was found to remain good, and stimulation of respiration was all that was necessary.

Oftentimes the blood pressure would rise immediately at beginning of the operation. Thus vasomotor stimulation as a result of an operative procedure would cause a rise from 10 to 20 mm. of mercury. It impressed us that a little inhalation of ether was valuable as a respiratory stimulant, and was usually given by the drop method on the open mask. Surprisingly small amounts of ether were found necessary.

Depressant respiratory effect was noted in nineteen out of the 224 anesthesia, that is, the respirations dropped to ten or twelve or below this level. Nineteen out of the two hundred patients showed either respiratory or cardiac failure.

CASE REPORTS

Case 1, age 65, stopped breathing when transferred to the stretcher; the dosage received was 85 mg. avertin plus ¼ morphine.

Case 2, age 77, stopped breathing on transfer to stretcher; received 90 mg. avertin plus 1/6 morphine.

Case 3, age 72, developed Cheyne-Stokes type respiration on transfer to the room; had received 60 mg. avertin plus 1/6 morphine.

Case 4, age 75, respiration became very depressed, dropping from one to two per minute; the dose was 60 mg. avertin plus ether plus ¼ morphine.

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5. Pangman, W. J.: Surgeon Views Avertin as Basal Anesthetic. Anesth. & Analg., 18:282-287, Sept.-Oct., 1939. Avertin as Basal Anesthesia. Southwestern Med., 22:6-8, Jan., 1938.

6. Clark, J. B.: Prostatectomy at Age of 110. J.A.M.A., 113:587-588, Aug. 12, 1939.

Case 5, age 63, on transfer to the room had difficulty in breathing and artificial respiration was found necessary. Dosage was 70 mg. avertin plus nitrous oxide plus ¼ morphine.

Case 6, age 66, on return to the room stopped breathing; artificial respiration was given; dose of 70 mg. plus ¼ morphine.

Case 7, age 60, respirations were shallow; received 60 mg. plus nitrous oxide and ⅛ morphine.

Case 8, age 70, second setting; respiration poor, irregular; this was one of hypertension, blood pressure 230/110; received 70 mg. plus ether plus 1/6 morphine.

Case 9, age 83, patient very asthmatic, had bronchial asthma for many years; respiration stopped and artificial respiration was necessary; dose of 65 mg. avertin and 1/32 dilaudid.

Case 10, age 68, cyanosis shortly after receiving avertin; respiration improved immediately on instrumentation at beginning of the operation; this was a carcinoma of the prostate; received 70 mg. avertin and ¼ morphine.

Case 11, age 68, expired on the second postoperative day; received 80 mg. avertin plus ¼ morphine; the autopsy record showed thrombosis of the left femoral vein and the various tributaries, with pulmonary embolism.

Case 12, age 83, respiration intermittent; received 60 mg. avertin and 1/20 dilaudid.

Case 13, female, age 52, carcinoma of the urethra; respiration very shallow; artificial respiration.

Case 14, age 75, expired on the morning of the first postoperative day; diagnosis, cardiac failure; this patient had had urinary retention over a long period of time; received 60 mg. avertin and ¼ morphine.

Case 15, age 70, respiration slow and difficult; carbogen was used; received 70 mg. avertin and 1/32 of dilaudid.

Case 16, age 61, cyanosis on returning to room; blood pressure in this instance dropped to 85/50; carbogen was used; 70 mg. avertin, 1/20 dilaudid.

Case 17, age 72, respiration regular but dropped to twelve; no stimulation used; avertin 80 mg., dilaudid 1/32.

Case 18, age 83, radical operation, enucleation of prostate; weight of prostate was 209 grams; profuse bleeding occurred during the process of operation; respiration dropped to 10 and 12; 60 mg. avertin used and 1/32 dilaudid.

Case 19, age 76, expired the following morning; diagnosis, cardiac failure; this patient had a complete retention over a long period of time; 30 mg. avertin, 1/20 dilaudid.

We are particularly impressed with the fact that the pulse in all of these nineteen cases remained good in spite of respiratory failure. In this group six received the smaller dosage of 60 mg. avertin plus morphine and dilaudid, and one 30 mg. avertin plus 1/20 dilaudid. The remaining thirteen received 65 mg. and one a maximum dose of 90 mg. plus 1/6 of morphine. Cyanosis was rarely observed. Nineteen out of the 224 avertin inducted anesthesias, or 8.4 per cent showed signs of respiratory or cardiac failure and necessitated close observation until they were thoroughly awake. It will be seen how necessary it is that the patient be watched until he is partially awake. Depressed respiration in some instances did not occur until the patient was being transferred from the operating table to the stretcher or even after return to the room.

The distinct advantage of this anesthesia is the restful quiet that the patient experiences for four to six hours following the operation. Postoperative emesis was practically negligible, as it occurred in only 8.4 per cent of the cases. Thus the majority of patients were taking fluids by mouth early, and in some instances a light tray was given in the evening of the operative day. This we feel is of particular advantage in this type of patient. During the quiet period the legs were moved or changed in position to stimulate circulation in the extremities. Intravenous fluids were administered to those showing peripheral vascular failure and to those in whom hemorrhage had been marked.

Recovery from sleep in practically all cases was remarkably smooth with the patient having no recollection of having entered the surgery. This prevention of psychic shock in the elderly individual is of value, where second settings are necessary. In the total of 224 anesthesias, second or third settings were performed in the following: in the fifth decade three had second settings; the sixth decade eight had second settings, three had third settings, and one had a fourth setting; in the seventh decade five had two settings; in the eighth decade two had second settings.

Various authors have reported repeated doses in a short period of time. For example, Demarest (quoted by Pangman) reported one case receiving seventy-five successive doses, totaling 378 cc. of avertin. Another case of tetanus received seventy successive doses. Bernheim (quoted by Pangman) reported a case of Sydenham's chorea in a fourteen year old patient who received twenty-seven doses of avertin in four days, with complete control of convulsions and recovery.

DISCUSSION

We realize that this is a rather short series of cases from which to draw definite conclusions, but we do feel that our number of respiratory depressants would have been less, if we had eliminated the preoperative hypodermics of opiates. This, coupled with the advanced age of the patient plus the major operations performed, proved too much for the patient.

In this series there were 179 resections performed, four prostatectomies, four hydroceles, five lithotripsies, five dilatations of the posterior or anterior urethra, two cystotomies, one nephrostomy, twenty biopsies or postoperative bleeding or instrumentation, two epididymectomies, one nephrectomy, one carcinoma of the urethra in a female, or a total of 224 operations or instrumentations on two hundred patients. In this group fifty-two had complete retention, eighteen had carcinoma of the prostate, fourteen carcinoma of the bladder, one tuberculous prostatitis, and two ureteral stones.

No resections were performed on patients with less than 60 cc. of residual urine. It would impress us, after a review of the literature and the results obtained in this series, that avertin used as a basal anesthesia would be valuable in many types of operation. Wood[7] gives her impressions drawn from 2,854 cases. Avertin was used in fifty per cent of the mastoid cases, and in one hundred and twenty-five gynecologic cases.

In the past eighteen months nephrectomies and nephropexies were done were done routinely under avertin, and so were most of the major orthopedic operations. It is ideal for hyperthyroid cases, osteopathic flaps and suboccipital decompressions. Ether was found to cause too much edema of the brain.

It has been given for many minor procedures such as cystoscopies, lumbar punctures and injections of air into the peritoneum. It is particularly valuable in neural surgery and a splendid anesthetic for those with myocardial damage. The comparative safety, that is, comparing avertin with ether, nitrous oxide, spinal anesthesia and so on, will undoubtedly vary when quoted by different authors. Pangman quotes the 1932 figures in Germany as being an average death rate of 1 in 14,000 from avertin. The death rate from the use of avertin probably is no greater than ether or nitrous oxide.

SUMMARY

1. We have reported two hundred cases in which avertin was used as a basal anesthesia.

2. Eighteen patients were subjected to more than one anesthesia.

3. The youngest patient reported was fifty and the oldest eighty-six.

4. There were nineteen who showed signs of serious respiratory or cardiac failure.

5. The majority of these patients were subjected to major operations.

6. The decided advantages of this type of anesthesia are the absence of psychic trauma, marked decrease in postoperative vomiting, the early intake of fluids and food by mouth, and the willingness of the patient to repeated anesthesias.

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[7] Wood, D. A.: Avertin: Appreciation and Comparison. Anesth. & Analg., 17:252-257, Sept.-Oct., 1938.

DIAGNOSIS AND TREATMENT OF NEUROSYPHILIS*

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The therapy of neurosyphilis is no longer in the experimental stage. Utilization of nonspecific, as well as specific, treatment has made the outlook considerably more encouraging than in the past. The physician should be familiar with modern methods of diagnosis and therapy in order to give his patient the best possible chance of controlling his infection. Some of the outstanding features and pecularities of this disease will be reviewed.

The number of individuals with neurosyphilis, who give no history of a chancre or cutaneous lesions, is noteworthy. Although some of the failures to obtain such information must be attributed to the length of time elapsing between the initial infection and the onset of neurologic symptoms, it is known that a considerable number of people, especially women, develop syphilis of the central nervous system without being cognizant of the local manifestations at the site of inoculation. Moore[1] states that, "it is highly probable that symptomless infection . . . occurs in human beings, and that, indeed, it is relatively frequent. Exactly how frequent, it is impossible to determine, but I have elsewhere hazarded the guess that at least one man of every five and one woman of every three who acquires syphilis does so without ever developing any lesions recognizable as early syphilis."

It is evident that these particular individuals unknowingly harbor and spread the infection, and that the only possible means of discovering such patients before serious complications arise is through the routine use of serologic tests on the blood. In spite of the definite progress being made in the campaign to eradicate syphilis, it is safe to predict that the problem of neurosyphilis will be with us for many years, because numerous infected individuals will go unrecognized, and many patients with syphilis will, for one reason or another, be inadequately treated.

It requires only a few days for the spirochete to invade the blood stream. The chancre appears, on an average, twenty-one days after contact. The secondary manifestations make their appearance four to twelve weeks after the appearance of the primary. Both the primary and secondary stages are tissue reactions to the infection which becomes a septicemia. Hence, it is not surprising that the nervous system is involved in a fairly high percentage of cases, as indicated by an increase in globulin, pleocytosis or a positive spinal fluid Wassermann.[2,3] Merritt and Fremont-Smith[4] make the following statement: "Thus it is apparent that a large proportion of the cases of syphilis show abnormalities in the fluid early in the disease, approximately 25 to 30 per cent of the cases showing abnormalities within the first half year and 35 to 45 per cent in the second half year of the infection. In a considerable proportion of these cases the cerebrospinal fluid becomes negative in the succeeding years, either as a result of therapy or spontaneously."

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*Read before the Forty-Eighth Annual Meeting of Idaho State Medical Association, Sun Valley, Idaho, Sept. 11-14, 1940.

[1] Moore, J. E.: Modern Treatment of Syphilis. Charles C. Thomas, Springfield, Ill., 1933.

What is the prognosis of treated and untreated syphilis? In the series reported by Bruusgaard,[5] approximately 9.5 per cent of patients with untreated early syphilis developed neurosyphilis. Adequate treatment of early syphilis will "cure" 90 to 100 per cent of the cases, so that the chances of a person developing neurosyphilis are very slight. The greatest danger to the patient lies in incomplete treatment. Moore's table shows that the incidence of serious late syphilis, of which neurosyphilis forms approximately one-half the cases, rises to 35 or 40 per cent in inadequately treated cases. Thus it is well recognized that the incomplete treatment of early syphilis greatly increases the probability of some serious complication in the nervous system at some later date. The reason for this increase is quite evident, when we recognize that antisyphilitic drugs lessen the individual's resistance to the disease by preventing the development of natural immunity.

Hence, in early syphilis, incomplete treatment is more dangerous to the patient than is no treatment at all. This statement should not be interpreted as a recommendation for withholding antisyphilitic therapy, because relatively few injections of an arsphenamine preparation make the individual incapable of transmitting the infection. Instead, it is a plea for thorough and adequate treatment, beginning as soon as possible after the infection is discovered.

It is essential that every patient with syphilis have an examination of the cerebrospinal fluid. In early syphilis it should be examined six months and two years after the beginning of treatment. ". . . the presence of a negative cerebrospinal fluid two or more years after the infection is almost absolute assurance that parenchymatous neurosyphilis will never develop, and a positive fluid at that stage is a serious warning of this danger . . ."[6] In the late case of syphilis, the spinal fluid should be examined at once.

CLASSIFICATION OF NEUROSYPHILIS; THERAPY

The most commonly encountered types of neurosyphilis will be reviewed.

1. *Asymptomatic Neurosyphilis.* In this type of syphilis of the nervous system there are no subjective manifestations. The only objective finding is an abnormal spinal fluid. Such patients should receive ten weekly injections of neoarsphenamine (0.45-0.6 gm.). This course should then be followed by a similar number of intramuscular injections of a suitable bismuth preparation, such as bismuth salicylate (0.13 gm.). These courses should be alternated until the cerebrospinal fluid is normal. The spinal fluid should be examined every six months. If, after several courses of neoarsphenamine the spinal fluid remains positive, tryparsamide (3.0 gm.) should be substituted for the neoarsphenamine. If chemotherapy is not successful in changing the spinal fluid to normal, malaria therapy is advisable. The report of the Cooperative Clinical Group[7] indicates that satisfactory serologic reversal was produced and maintained in 65 per cent of the cases. In only 6 per cent was there clinical progression in spite of the utilization of all methods of therapy.[8]

2. *Meningovascular Neurosyphilis.* This group can be subdivided into the meningeal and vascular types, although such classification is somewhat arbitrary. The symptoms of the meningeal type are headache, dizziness, vomiting and convulsions. The physical examination shows cranial nerve palsies, stiff neck, Kernig sign and positive spinal fluid. Routine therapy with an arsphenamine and a bismuth preparation usually produces a satisfactory or even a dramatic therapeutic result. The rapid subsidence of the symptoms under treatment may result in the patient discontinuing therapy long before the infection has been controlled. These patients should receive treatment for at least eighteen months, and, if the spinal fluid remains positive

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[2] Wile, U. J. and Hasley, C. K.: Involvement of Nervous System during Primary Stage of Syphilis. J.A.M.A., 76:8-9, Jan. 1, 1921.

[3] Mills, C. H.: Routine Examination of Cerebrospinal Fluid in Syphilis. Brit. M. J., 2:527-532, Sept. 24, 1927.

[4] Merritt, H. H. and Fremont-Smith, F.: Cerebrospinal Fluid. W. B. Saunders Co., Philadelphia, 1937.

[5] Bruusgaard, E.: Ueber das Schicksal der nicht spezifisch behandelten Luetiker. Arch. f. Dermat. u. Syph., 157:309-332, 1929.

[6] Merritt, H. H.: Neurosyphilis and Its Treatment. New England J. Med., 221:817-819, Nov. 23, 1939.

[7] O'Leary, P. A., et al.: Cooperative Clinical Studies in Treatment of Syphilis; Asymptomatic Neurosyphilis. Arch. Dermat. and Syph., 35:387-401, 1937.

[8] O'Leary, P. A.: Present-Day Status of Treatment of Neurosyphilis. J.A.M.A., 109:1163-1166, Oct. 9, 1937.

at the end of that time, they should be given fever therapy.

The vascular type of neurosyphilis frequently shows signs of meningeal irritation preceding or coincident with the development of signs and symptoms of vascular occlusion. The neurologic findings will depend upon the number, size and location of vessels occluded. Familiar examples of this condition are hemiplegias and paraplegias. Syphilis must be suspected when a certain middle-aged individual develops the symptoms and signs of vascular disease of the nervous system. The prognosis will depend upon the amount and location of the damaged tissue. Antisyphilitic treatment cannot be expected to repair extensive parenchymatous lesions. Treatment consists of prolonged use of chemotherapeutic agents in small doses. Potassium iodide is still administered, but its efficacy is questionable. Through the administration of antisyphilitic treatment, one hopes to restore circulation through partially occluded vessels, and to prevent the occurrence of future vascular accidents.

3. *Paretic Neurosyphilis.* It is now generally agreed that the routine use of arsphenamines and heavy metals will accomplish little to control this disease.[9] Since proper treatment is said to produce economic remissions in 50-60 per cent of the early cases, and 30 per cent of the more advanced cases, prompt recognition and adequate treatment are essential. The prognosis of paresis is considerably better since the introduction of malaria therapy by Wagner von Jauregg,[10] and tryparsamide by Jacobs and Heidelberger.[11] The symptoms of paresis include headache, fatigue, irritability, decline in efficiency, failure of memory, disturbances in sleep, depression or euphoria. Mental examination reveals impairment of memory, emotional instability, variability of mood, disorientation, lack of insight, delusions and hallucinations. Physical examination shows pupillary changes, tremor of the face and hands, speech difficulty and hyperactive or hypoactive deep reflexes. The blood and spinal fluid Wassermann reactions are positive in the majority of these patients.

After the diagnosis of paresis is established, fever therapy should be instituted without delay. Other methods of inducing pyrexia, such as the inductotherm and heat cabinet, are in common usage. When malaria therapy is instituted, the benign tertian or quartan species is used. Five to 10 cc. of citrated blood are injected intravenously. After an incubation period of three to thirty days the patient develops chills and fever, if inoculation is successful. The patient should be watched carefully during his course of malaria.

Indications for terminating the infection before the course is completed are the following: marked weakness and debility, a pulse rate over 140 per minute, a fall in systolic blood pressure below 90 mm. Hg., persistent pyrexia over 105° F., jaundice, increase of blood urea to 50 mg. per 100 cc. and fall of erythrocytes below 2,500,000. A course of ten bouts of fever is considered sufficient.

After termination of malaria, tryparsamide (2-3 gm.) is given intravenously at weekly intervals. Use of this drug carries the danger of producing or aggravating an optic atrophy, so that careful ophthalmoscopic and visual field studies must be performed on all individuals in whom tryparsamide therapy is contemplated. If the visual fields are constricted, or if optic atrophy is present, tryparsamide must not be given. If, during the course of therapy with this drug, the patient complains of blurring of vision or constriction of his visual fields, this type of treatment must be stopped at once. Approximately 95 per cent of unfavorable reactions, if they do occur, make their appearance before the tenth injection.[12] Tryparsamide and bismuth, or neoarsphenamine and bismuth, are administered in alternating courses for several years or longer, depending on the clinical and serologic course of the disease. The individual who becomes worse during treatment, or the advanced paretic, may ultimately require institutional care.

4. *Tabetic Neurosyphilis.* This condition is usually more insidious than the other types which I have discussed. Tabes dorsalis is characterized by the following symptoms: shooting pains, girdle sensation, unsteadiness in walking, loss of sexual power, disturbance of vesical control, bouts of vomiting and abdominal pain (crises), and failure of vision. Physical examination shows pupillary abnormalities, cerebral nerve palsies, optic atrophy, loss of muscle tone, malnutrition, reduction or absence of deep reflexes, loss of deep sensibility, reduced and delayed sense of pain, ataxia of station and gait, incontinence, Charcot joints and trophic ulcers. Far advanced "burned out" tabetics frequently have negative serology both in the blood and spinal fluid.

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[9] O'Leary, P. A.: Treatment of Neurosyphilis. Proc. Staff Meet., Mayo Clin., 12:712-716, Nov. 10, 1937.

[10] Jauregg, J. W. von: Ueber die Einwirkung der Malaria auf die progressive Paralyse. Psych.-neurol. Wchnschr., 20:132-134, and 251-256, 1918.

[11] Jacobs, W. A. and Heidelberger, M.: Aromatic Arsenic Compounds. J. Am. Chem. Soc., 41:1581-1644, 1919.

[12] Woods, A. C. and Moore, J. E.: Visual Disturbances Produced by Tryparsamide. J.A.M.A., 82:2105-2111, June 28, 1924.

Treatment of tabes dorsalis is less standardized, and the outlook is considerably less hopeful, than in the other types of neurosyphilis. Routine chemotherapy should be tried. The physician can change to tryparsamide, if there is no optic atrophy, or to malaria therapy, if the condition is progressive. The chances of arresting optic atrophy are very slight. Individuals who suffer from repeated gastric crises and who have not responded to antisyphilitic therapy may require surgical intervention. Recent reports in the literature[13, 14] show that chordotomy is advisable in intractable cases. Charcot joints demand orthopedic care, and the urologist should be consulted when bladder difficulties, especially urinary retention, appear.

Intraspinal therapy appears to be losing favor. Merritt states: "The introduction of salvarsan serum intraspinally (Swift-Ellis treatment) which was in vogue several decades ago has waned in popularity, and has been replaced in practically all clinics by tryparsamide or fever therapy."

SUMMARY AND CONCLUSIONS

Under present conditions, and until a more adequate program for the control of syphilis is instituted, the problem of neurosyphilis will continue to confront us. This situation is due to the fact that many people with syphilis do not report to a physician, that possibly 25 per cent of all individuals with syphilis do not exhibit the primary or secondary manifestations of the disease, and that many individuals with the infection allow treatment to lapse, once the period of immediate danger is over. The diagnosis of primary and secondary syphilis is made by having a high index of suspicion of the disorder, and then by proving the diagnosis by either dark field or serologic methods. Most of the late cases will be discovered by careful physical examination, in addition to the routine use of serologic methods on all cases which come under the physician's care, whether there is a history of infection or not.

Intensive therapy, consisting of alternating courses of an arsphenamine preparation and a heavy metal, should be commenced as soon as possible in early cases. All patients who have contracted syphilis should have one or more spinal fluid examinations. Spinal puncture should be performed at once in late cases, and six months and two years after the beginning of treatment in early cases.

If the central nervous system is known to be invaded, it is important for the physician to recognize the type of involvement. The asymptomatic, meningovascular, paretic and tabetic types constitute the majority of cases of neurosyphilis. The therapeutic aims should be, first, symptomatic relief; second, clinical arrest; third, serologic normality.[1] Except for the special types of neurosyphilis, such as paresis, it is advisable to begin with the least drastic methods of treatment first, and to reserve such therapeutic measures as tryparsamide and fever treatment, if response to arsphenamine and bismuth is not satisfactory.

Treatment of neurosyphilis must be planned in terms of years rather than weeks or months. After completion of therapy, repeated physical and serologic examinations are necessary to safeguard the patient.

INTERNAL HYDROCEPHALUS

DUE TO SYRINGOMYELIALIKE PROCESS OF AQUEDUCT OF SYLVIUS*

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The purpose of this paper is to present an unusual cause of internal hydrocephalus. No attempt will be made to add anything to the pathogenesis of the condition. There has been disagreement as to the terminology for this condition, with which we have no brief.

The patient was a white male, age three years and six months at the time of death. He was first seen at the age of two years and eight months, at which time the chief complaints were head cold and cough. One week before admission he developed a slight fever and difficulty in breathing, which had become progressively worse. Past history revealed a full term normal delivery and gestation with birth weight seven pounds and fifteen ounces. He walked at ten months and talked at one year.

At time of the first hospital admission rectal temperature was 106.5°. There was diminished resonance over the posterior hilar lung areas but no rales were heard. Frontal bossae were described as prominent. The head was held rigid on attempts at flexion. Temperature dropped to normal the day after admission but the child remained prostrated. White blood cell counts and sedimentation rates were elevated. He was discharged improved five days after admission.

He was readmitted three months later, complaining of inability to walk and constipation. Following the previous admission he had remained in bed with a low grade fever and when allowed up could not walk by himself and even with aid walked with difficulty. Physical findings were

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13. Kahn, E. A. and Barney, B. F.: Anterolateral Chordotomy for Intractable Pain of Tabes Dorsalis. Arch. Neurol. and Psychiat., 38:467-472, 1937.
14. Hyndman, O. R. and Jarvis, F. J.: Gastric Crisis of Tabes Dorsalis. Arch. Surg., 40:997-1013, 1940.

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*Read at meeting of North Pacific Society of Neurology and Psychiatry. Tacoma, Wash., April 20, 1940.

negative except for neurologic signs. Abdominal reflexes were present but more marked on the right. There was a bilateral positive Babinski and positive ankle clonus. A week later the lower extremities were described as spastic and it was suggested this was the cause of the walking difficulty. An undetermined degree of bilateral choked disc was present and the spinal fluid pressure was 550 mm. of water. There were no cellular or chemical alterations of the cerebrospinal fluid. The head circumference was larger than normal, measuring 53.5 cm. Encephalogram was postponed because of some clinical improvement and he was again discharged.

His last admission to the hospital was on October 6, 1939, at which time his chief complaint was headache. His mother stated he had improved somewhat in ability to walk but on occasion would become quite clumsy and stagger considerably. Physical examination was essentially the same as on the previous admissions. On October 12 an encephalogram was attempted, but there was no visualization of the lateral ventricles, the air apparently not penetrating beyond the aqueduct of Sylvius. The encephalogram was repeated on October 19 with similar results and following the removal of fluid the child developed respiratory difficulty and expired.

The essential pathologic findings were limited to the brain. Grossly it showed flattened and poorly developed cortical convolutions. On cut surface both lateral ventricles were markedly dilated throughout. They measured 11.5 cm. anteroposteriorly and 4.5 cm. laterally. There were several small perforations in the septum pellucidum. There was a large, dilated cavum septum pellucidum. Both foramena of Monro were dilated, measuring 1 cm. each in diameter. The third ventricle was enlarged, measuring 3 cm. laterally, 3 cm. anteroposteriorly and 2 cm. vertically. The massa intermedia was stretched across the third ventricle and the basal ganglia were pushed inferiorly. The choroid plexus was normal in appearance and position. The total volume of lateral and third ventricles was 300 cc. In the central portion of the aqueduct of Sylvius there was a complete obliteration about 1 cm. in length (fig. 1). The aqueduct was dilated above the obliteration and of normal size below. The fourth ventricle was of normal size.

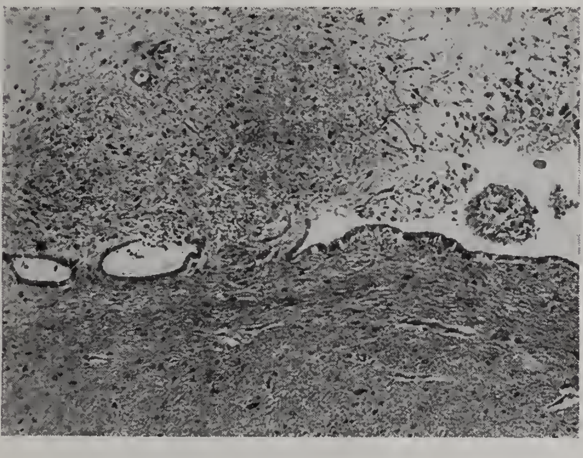

Fig. 1. Microphotograph showing remaining small, distorted and irregular aqueduct of Sylvius surrounded by glial fibers, and also separate collections of ependymal cells.

Microscopic examination showed a tiny opening in the usual position of the aqueduct of Sylvius. Its outline was distorted and irregular and was surrounded by a dense network of glial fibers. Collections of ependymal cells were found within these areas of glial sclerosis. Some of these formed small cysts. The ependymal lining of the aqueduct was not intact and there was some desquamation into the cavity. There was no recognizable evidence of an inflammatory process in these regions. Polypoid proliferations of glial tissue projected into the lumen of the aqueduct in the regions where the ependyma was not intact. These did not resemble tumor tissue. Sections of the nervous system below the level of the aqueduct were entirely normal, while sections above showed the characteristic atrophic changes commonly associated with chronic internal hydrocephalus.

Spiller[1] in 1902 was the first to describe this type of obstruction of the aqueduct of Sylvius. In 1916[2] he studied the microscopic appearance of the aqueduct of Sylvius in thirty-eight unselected brains. He demonstrated wide variations as to size and shape of this structure even in this small collection of material. He also found detached groups of ependymal cells and concluded that, in accordance with the development of the aqueduct which has the same analage as the central canal of the spinal cord, it becomes smaller with the development of the fetus and this regression may extend beyond normal limits, producing complete obliteration of the canal with secondary hydrocephalus. This idea is also held by Sheldon, Parker and Kernohan[3], and Parker and Kernohan[4]. That there is also the possibility of an inflammatory constriction of the aqueduct of Sylvius is recognized by these authors as well as others, particularly Dandy[5].

In the case reported the child was first admitted because of a respiratory infection. At this time it was noted that the frontal bossae were prominent and the head circumference was increased, so that previously increased intracranial pressure must have been present. Histologically there were no evidences of inflammatory changes in the brain. The lesions present were similar to those observed in syringomyelia elsewhere in the central nervous system.

SUMMARY

A case of occlusion of the aqueduct of Sylvius is presented, producing internal hydrocephalus due to a process thought to be identical with that of syringomyelia. This condition must be differentiated from chronic or granular ependymitis as well as glial tumors.

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1. Spiller, W. G.: Two Cases of Partial Internal Hydrocephalus from Closure of Interventricular Passages. Am. J. Med. Sc., 124:44-55, Jan., 1902.

2. Spiller, W. G.: Syringoencephalia. J. Nerv. & Ment. Dis., 44:395, Nov., 1916.

3. Sheldon, W. D., Parker, H. L. and Kernohan, J. W.: Occlusion of Aqueduct of Sylvius. Arch. Neurol. & Psychiat., 23:1183-1202, June, 1930.

4. Parker H. L. and Kernohan, J. W.: Stenosis of Aqueduct of Sylvius. Arch. Neurol. & Psychiat., 29:538-560, March, 1933.

5. Dandy, W. E. and Blackfan, K. D.: Internal Hydrocephalus. Am. J. Dis. Child., 8:406-482, Dec., 1914.

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PARATYPHOID FEVER WITH NEGATIVE BACTERIAL FINDINGS*

CASE REPORT

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In the September, 1940, issue of Northwest Medicine was published an editorial on "Paratyphoid C a Cause of Food Poisoning." I was particularly impressed by the insistence on the need of better epidemiologic studies by the general practitioner. I was reminded of a little book which is a beautiful example of what the general practitioner ought to do in epidemiology, entitled "Epidemiology in Country Practice," by Pickles.

I have recently treated a patient with Paratyphoid B, a description of whose case is herewith presented. This also emphasizes the fact that paratyphoids are difficult to place epidemiologically. In this case careful inquiry failed to reveal the source of the disease.

W. A., aged 42, night watchman. Residence in San Francisco and has been outside city within several months on one day only, for a country picnic. His previous history is entirely irrelevant.

Present Illness: Patient was admitted to Franklin Hospital on January 11, 1940. On January 6 he had a gastric upset, apparently following indiscreet eating. Following this and up to date of admission, his only complaint was of severe frontal headache, chilliness and a slight fever (fig. 1).

Examination was entirely negative except for enlarged spleen which was firm and easily palpable. A tentative diagnosis was made of typhoid fever. On January 15, one rose spot was seen on the abdomen. Bowel condition continued normal. The patient was mildly apathetic but took a high caloric diet without difficulty.

On January 17, the headache was more intense. The neck was stiff. Kernig, Oppenheim and Gordon reactions were positive. Vibratory sensation was reduced in both tibias. Abdominal reflexes were much increased. Pupils and eyegrounds were normal. 8.0 cc. clear spinal fluid were removed and proved to be normal.

Diagnosis of toxic meningismus was made by Dr. Edward F. Stadtherr. On January 22, headache and all neurologic symptoms and signs had disappeared. On January 23, phlebitis appeared in a superficial vein on inner side of right leg. This did not extend, and disappeared in one week. The patient was discharged from hospital on February 21 with normal (preadmission) weight and no symptoms.

Laboratory data: Urine: January 11, clear, amber, acid, 1.030, no albumin, no sugar. Sediment contains amorphous deposit and mucous shreds only; January 13, hazy, amber, acid, 1.030, very faint trace albumin, no sugar, sediment none. Culture, no growth. Stools: cultures were negative for typhoid-dysentery group of organisms on Jan. 13, 14, 15, 17, 22, 24 and Feb. 5, a total of seven negatives. Nasopharyngeal culture on January 19 showed no meningococci, and was positive for staphylococci only. Smears showed Gram-positive cocci and diplococci. Blood Wassermann and Kahn reactions were negative. Blood cultures on January 12 and 14 were negative. Blood counts were as follows:

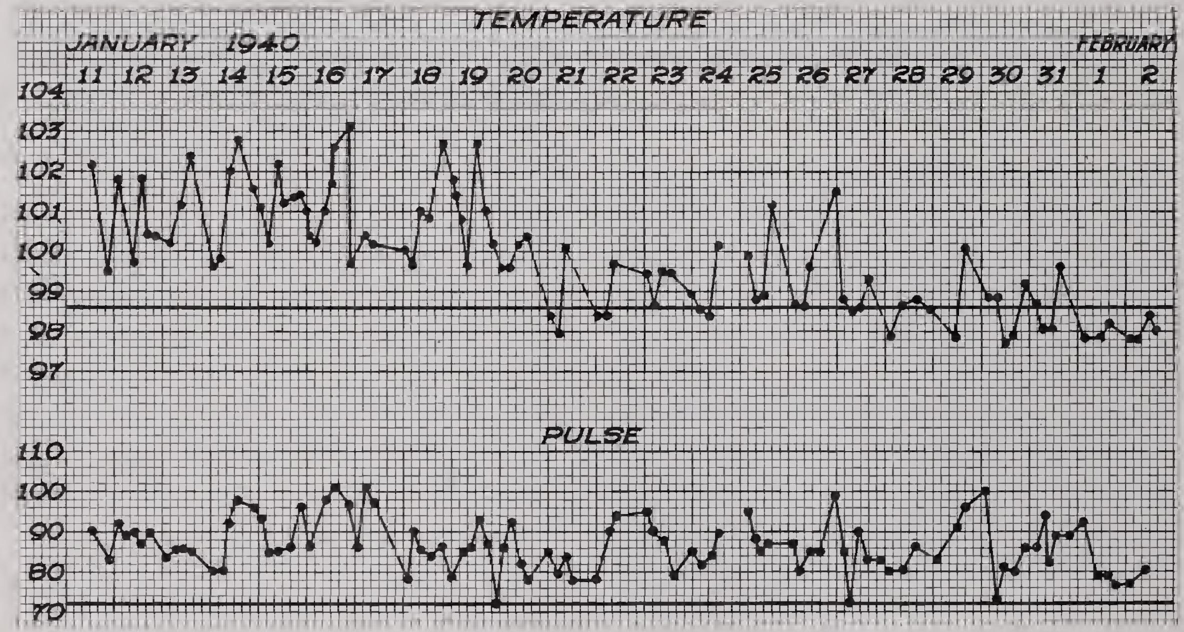

Fig. 1. Case of Paratyphoid B fever. Temperature and pulse records.

	Hemoglobin	Per Cent	Red Cells	White Cells	Neutrophiles	Lym.	Lg. Mono.	Bas.	Eos.
Jan. 11 —	16.3 G. or	94	4,690,000	4,650	63	28	9		
Jan. 12 —				5,050	70	22	7	1	
Jan. 17 —	14.5 G. or	84	5,160,000	5,800	73	17	7		1
Jan. 30 —	11.9 G. or	69	3,230,000	5,450	45	43	12		
Feb. 12 —	13.2 G. or	76	4,490,000	8,500	66	31	1		2

No malaria plasmodia found on repeated search.

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*From Medical Service of Franklin Hospital and Division of Preventive Medicine, Medical School, University of California.

BLOOD AGGLUTINATION

	Typhoid	*Para A*	*Para B*	*Brucella*	*Tularemia*
Jan. 11 —					
(1/10—1/320)	0	0	0	0	0
Jan. 16 —					
(1/10—1/1280)	0	0	0	0	0
Jan. 18 —					
(1/10—1/1280)	0	0	0	0	0
Jan. 23 —					
(1/10—1/1280)	0	0	—	—	—
(1/10—1/20)	—	—	+	—	—
(1/40)	—	—	+	—	—
Jan. 30 —					
(1/20—1/1280)	0	0			
(1/20)	—	—	+	—	—
(1/40)	—	—	+	—	—
(1/80)	—	—	+	—	—
Feb. 21 —					
(1/10—1/1280)	0	0			
(1/40)	—	—	+	—	—
May 2 —					
(1/10—1/1280)	0	0	—	0	
(1/20—1/1280)	0	0	0	0	
(1/10)	—	—	+	—	

Blood agglutinations with leptospira were negative.

Diagnosis: Para B typhoid fever. This diagnosis was made in the absence of bacteriologic recovery of the organism in (a) two blood cultures on the sixth and eighth days of fever, (b) one urine culture on seventh day of fever, and (c) seven stool cultures on the seventh, eighth, ninth, eleventh, sixteenth, eighteenth and thirtieth days respectively from the onset. The diagnosis is supported by positive agglutinations for Para B typhoid, by the typical clinical course of rather moderate severity, enlarged spleen, and leukopenia, complicated by meningismus and phlebitis. It was also supported by absence of positive evidence of other disease.

Treatment was entirely symptomatic, with a high-caloric smooth diet, hematinics, acetyl salicylic and sedatives as needed.

350 Post Street.

SOLUBLE IODOPHTHALEIN FOR CARRIERS OF TYPHOID AND PARATYPHOID

In reporting an apparent cure of a typhoid carrier by means of the drug soluble iodophthalein, James R. Enright, M.D., Honolulu, T. H., in *The Journal of the American Medical Association* for January 18 states that his case is an additional indication that further trial of this substance is warranted in typhoid and paratyphoid carriers. A previous report by two other authors cited its apparent success in a carrier of paratyphoid, a disease similar to typhoid.

After only three doses of the drug by mouth, the stools of Dr. Enright's patient were negative for the typhoid organisms. They will be checked for at least a year, he says, and if they continue to be free of organisms the patient will then be classified as carrier free.

"No conclusions can be drawn from this single case," Dr. Enright points out, "but it seems that the result in this case warrants the trial of this comparatively harmless treatment on carriers of the typhoid-paratyphoid group before surgical treatment (spleen removal) is considered."

SURGICAL RESPONSIBILITY IN TONSILLECTOMY*

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It has been estimated that 1,235,000 tonsillectomies are performed each year in the United States.[1] Glover[2] estimated that one-third of all operations under general anesthetics were tonsillectomies. Numerous medical workers, such as Reimann and Havens,[3] Hansel and Chang[4] and others have criticized this widespread procedure because the results in many instances have not seemed to be beneficial enough to justify it. It has also been realized that in some cases the operation does actual damage because of postoperative complications or permanent injury to structures in the throat. Further, a small piece of tonsil left in the fauces during the operation often is a more dangerous focus of infection than the original pair of tonsils. A recent survey,[5] made in Philadelphia of a group of tonsillectomized university students, showed that 77 per cent had tonsillar remnants in the fossae. The results achieved by general surgeons in those cases were about the same as those obtained by otolaryngologists, the only difference being that the specialists wounded the pillars and palate slightly less frequently than did the general practitioners.

In a study made by Dr. Lester T. Jones and myself of one hundred pairs of tonsils removed by various staff members in two Portland hospitals, we found that portions of pillars had been removed with 70 per cent of the specimens and that at least 15 per cent of the tonsils had been incompletely removed. To one of these were attached both anterior and posterior pillars and a large portion of the superior constrictor muscle. In addition, the tonsil had been incompletely removed. Not only is such work a serious indictment to our profession, but it also leaves the patient permanently deformed and may lead to medicolegal complications.

An operator who performs good general surgery may do very poor tonsillectomies because he feels that it is a simple minor operation which requires little thought or precision. I know of instances where the surgeon removes the tonsil by dissecting it out with his finger nail.

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*Read before the Sixty-sixth Annual Meeting of Oregon State Medical Society, Eugene, Ore., Sept. 4-7, 1940.

[1] Collins, S. D.: Frequency of Surgical Procedures among Nine Thousand Families, Based on Nationwide Periodic Canvasses 1928-31. Pub. Health Rep., 53:587-628, April 22, 1938.

[2] Glover, J. A.: Incidence of Tonsillectomy in School Children. Proc. Roy. Med. Soc., 31:1219-1236, Aug., 1938.

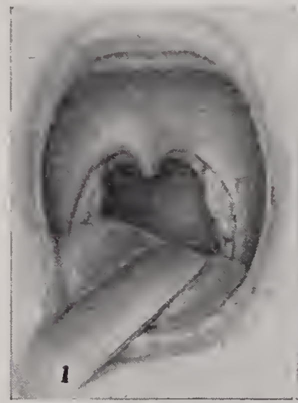
[3] Reimann, H. A. and Havens, W. P.: Focal Infection and Systemic Diseases; A Critical Appraisal. J. A. M. A., 114:1-6, Jan. 6, 1940.

[4] Hansel, F. K. and Chang, C. S.: Relations of Allergy and Tonsillectomy in Children. Arch. Otolaryng., 31:45-52, Jan., 1940.

[5] Campbell, E. H.: Tonsillectomy. Local Results and Influence of Operations on Surrounding Tissues. Arch. Otolaryng., 30:863-871, Dec., 1939.

We are all familiar with the local and general diseases which are brought about by acute and chronic tonsillar infections. From most diseased tonsils frank pus can be expressed. Solid, caseous concretions or even fluid pus which occur in the crypts may not be pathologic. A diseased tonsil is not necessarily large and, conversely, a large tonsil is not necessarily infected. The mere presence of large tonsils does not justify their removal, provided they are causing no local or general disturbance.

In this discussion I am not going to attempt to tell you when to remove tonsils. Neither will I recite all the routine details involved in this well-known procedure. My purpose is to describe a few ways in which I have attempted to improve the technic.



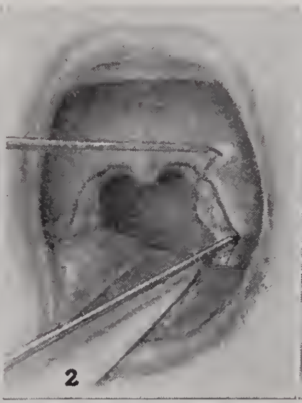
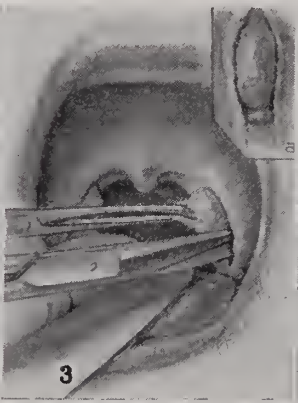


Fig. 1. Throat showing anterior and posterior pillars. Lingual lymphoid tissue is seen beneath lower tonsil pole.
Fig. 2. Sites of novocaine injection.



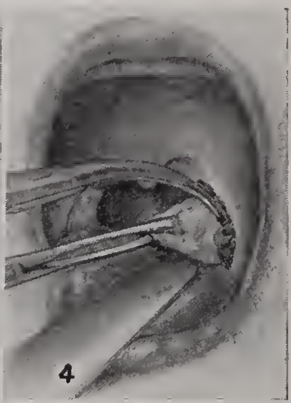


Fig. 3. Beginning of scissor incision on medial edge of lower part of anterior pillar. Inset shows position of lingual lymphoid tissue.
Fig. 4. Blunt dissection of tonsil from its bed.

The preoperative preparation is very important. Bleeding and clotting times are determined and the patient is questioned as to any history of bleeding. A good night's sleep before the operation is essential. One hour before surgery, I give the adult patient one and one-half to three grains of nembutal by mouth. One-half hour before the operation, he receives one-twentieth grain of dilaudid.

In adults, local anesthesia has many advantages. Postoperative nausea, etc., are much less, no infected material enters the respiratory tree, there is less danger of injuring teeth and lips, there is much less loss of blood, and active cooperation of the patient is obtained. If the anesthetic agent is properly injected, the operation will usually be painless and should disturb the patient very little.

In many instances the operator can predict before the procedure how well the patient will cooperate. He will usually recognize the patient who will be calm and relaxed and who will help in every way. On the other hand, he will probably also anticipate the actions of the apprehensive individual and vary the preoperative sedatives accordingly.

The surgeon should inspire the patient with confidence by being gentle and unhurried. This is a very important point. Above all, the surgeon must be calm and deliberate in every action. The nervous, rough and possibly irritable doctor should never attempt to do this kind of surgery. Even a tonsillectomy is a serious responsibility.

The nerve supply of the tonsil comes mainly from two sources; the upper pole by two descending branches from the sphenopalatine ganglion, the lower pole by the glossopharyngeal nerve. The blood supply may also be roughly divided into descending and ascending branches which anastomose freely behind the tonsil. The lateral wall of the tonsillar fossa is formed by the superior constrictor muscle. The anterior wall is formed by the glossopalatinus muscle which makes up the anterior pillar (fig. 1). The posterior wall is formed by the pharyngopalatinus muscle which constitutes the posterior pillar.

The buried surface of the tonsil is covered by a definite fibrous capsule. The upper two-thirds is loosely attached to the superior constrictor muscle, while the lower one-third is very tightly attached. Also the lower pole is held against the mandibular wall by a firm band of fascia, the tontillomandibular ligament, which passes backwards from the mylohyoid ridge to either the anterior margin or the oral surface of the tonsil. This accounts for the fact that a peritonsillar abscess usually points superiorly instead of inferiorly. It also explains why the lower portion of the tonsil is the part most frequently left in place.

An important consideration is the position of the patient. I believe that the semireclining position is the best. It would seem just as inconsistent for a tonsillectomy patient to be sitting straight up as for a dental patient. In addition, the semireclining patient is more relaxed and is less likely to develop shock or syncope. A dental chair is superior to any other.

The best local anesthesia is obtained by the block method. The branches supplying the upper pole are blocked by injecting 3 cc. of 1 per cent novocaine, containing four drops to the ounce of epinephrine 1:1000. This is injected with a curved tonsil needle introduced about midway between the upper pole of the tonsil and the third upper molar tooth (fig. 2). This should be put in to a depth of about one centimeter behind the tonsil. Every experienced operator senses when his needle is behind and above the upper pole. For the lower pole, a similar amount is used. With the needle, the lower part of the anterior pillar is retracted laterally so that it can be inserted lateral to the lower part of this pole. In this way, the entire base of the fossa is anesthetized.

These two injections, if properly placed, should be entirely adequate for a painless procedure. I feel that to deliberately inject the novocaine through the tonsil itself is to invite complications. If a needle accidentally enters tonsillar tissue, it should be discarded for a clean one. I feel that a preliminary swabbing of the throat with cocaine is unnecessary and only adds to the patient's gagging and discomfort. Also one occasionally encounters a patient who is sensitive to this drug.

The entire operation can be carried out in most cases with four instruments: a pair of tonsil scissors, an Allis clamp, a snare and a metal tongue depressor. A long, slender pair of tonsil scissors with curved blades which come to a rather sharp point and with fairly sharp outer edges should be used. This instrument can be used as a pillar retractor, as a knife, as a spoon, and as a blunt dissector. A small Allis clamp grasps the upper pole of the tonsil. Often to do this, one leg of the forceps is thrust into the tonsillar sinus. Care should be used to avoid the pillars. Certainly, a forcep with large clumsy teeth cannot avoid doing damage to the surrounding structures. While the tonsil is pulled toward the midline, its separation from the oral mucosa is begun by a scissor incision on the medial edge of the lower part of the anterior pillar (fig. 3). This incision is continued parallel with the pillar edge upwardly and around the upper pole and then down the anterior surface of the posterior pillar. The incision should be made along the very margin of the tonsil and should include only about one or two millimeters of the adjoining mucosa. In this way, the mucosa on the medial edge of the posterior pillar is left intact, and none of the muscle of either pillar is disturbed.

The tonsil is separated fròm its bed by blunt dissection with the scissors (fig. 4). After the separation has been carried down to the lower pole, the band of fascia stretching from the region below the lower third molar to the anterior margin of the tonsil, the tonsillomandibular ligament, should be separated. Not until this band has been severed should the snare be applied. Failure to do this is the chief cause for leaving tonsillar tissue at the base of the fossa.

Before the final tightening down of the snare wire, it is well to push the lower part of the posterior pillar out of the loop with the finger. A cotton ball is inserted into the fossa to stop bleeding while the second tonsil is being removed. The lingual lymphatic tissue and plica triangularis, which are located between the lower tonsil pole and the base of the tongue, should next be removed by lifting them into the snare with an Allis clamp. Occasionally a ligature is required. We highly recommend the use of the slip-knot method instead of traumatizing the fossa with a suture needle (fig. 5).

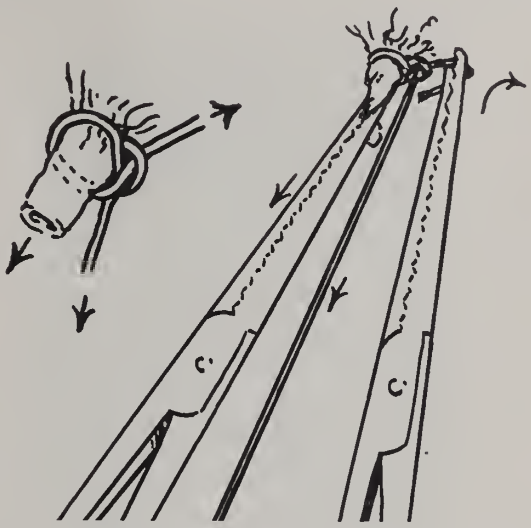


Fig. 5. Method of tying bleeding vessel in tonsillar fossa. An ordinary slip-knot is used with a hemostat on the short end and the finger on the long end.

For children, ether is the most practical anesthetic. Atropine sulphate grain 1/500 is given one hour before operation. A small catheter through the nose and mouth is used to make the posterior pillars stand out. This is a real protection. The La

Force tonsillotome is preferred but never without dissection of the pillars first. For the operator who has not perfected his dissection technic and who only removes tonsils occasionally, this instrument is especially good. After the pillars have been dissected, it is almost foolproof. In most patients the adenoids can be completely removed with the adenotome. This avoids the use of the curet which when improperly used so frequently damages the nasopharynx. In spite of meticulous removal of lingual lymphatic tissue, almost 100 per cent of preadolescents will show some degree of postoperative hypertrophy. This should cause no alarm as it is not cryptic and seldom acts as a focus for infection.

Most of the postoperative discomfort can be relieved by the free use of aspirin in the form of throat washes, powders and gum.

It has not been the intention of this paper to discuss the merits of tonsillectomy. My humble purpose has been only to reemphasize a few practical points which I feel are essential in the complete removal of a tonsil with the least possible injury to the patient (fig. 6). This, I feel, is our surgical responsibility. In the words of our ancient predecessors, "physician, do no harm."

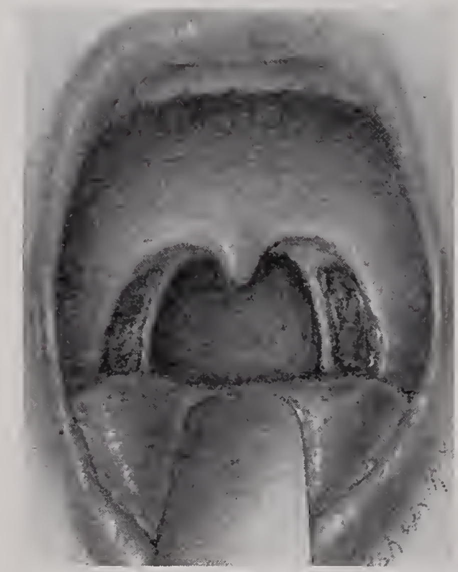


Fig. 6. Appearance of throat after tonsils have been removed. Note that the pillars, soft palate and uvula are undamaged.

* * *

SURGICAL MANAGEMENT OF GALLBLADDER DISEASE

DIAGNOSIS AND TREATMENT*

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and
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PORTLAND, ORE.

Surgery of the gallbladder was first performed upon a human by Petit[1] in 1743. As early as 1630 Zambeccari[2] removed the gallbladder from a dog. Tecop of Leiden in 1667 performed experiments upon dogs which led him to report that the gallbladder was entirely unnecessary for the health of the animal.

About this time Etmuller of Leipzig attempted to dissolve gallstones but failed and reported he felt that removal of gallstones was entirely in the field of surgery. Thus we see experiments on dogs preceded Petit's operation. Petit limited his operations to cases where the gallbladder was adherent to the abdominal wall so that he reduced to a minimum the chances for a generalized peritonitis.

Thudichum[3] advised suturing the gallbladder to the wound and at a later date opening it in order to remove gallstones. Here we have the first and second stage operation for gallbladder disease. It remained, however, for an American, J. Bobbs,[4] to open the gallbladder after opening the general peritoneal cavity. Then followed in rapid succession operations by Sims, April, 1878; Kocher, June, 1878; Keen, November, 1878, and Taft, 1879. All of these men drained the gallbladder. Only a few years later Langenbuch[5] operated on a forty-three year old male and entirely removed the organ.

One of the first comprehensive reports of surgery of the gallbladder came from Musser and Keen[6] in 1884. Following this, reports followed in rapid succession. Sims coined the word cholecystotomy from three Greek words meaning gall, bladder and incision. Langenbuch called removal of the gallbladder, cholecystectomy, following his first operation.

For many years the debate was on whether to perform drainage or to remove the gallbladder. As technic improved, Mayo[7] was able in 1899 to report sixty-four cases with one death and to call attention to the fact that drainage did not always relieve the patient. He advocated more cholecystectomies. Robson[8] in 1905 reported 281 cases with three deaths, 1.6 per cent. It was not until about 1915-1920 that the profession, as a whole, began to do cholecystectomies as a common procedure.

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*From Department of Surgery, University of Oregon Medical School.

*Read before the Sixty-sixth Annual Meeting of Oregon State Medical Society, Eugene, Ore., Sept. 4-7, 1940.

[1] Petit, J. L.: M'em de l'Acad. roy. de chir., 1:168, 1743.

[2] Quoted by Langenbuch, Carl: Verhandl; der Deutsch. Ges F. chir., 25:68, 1896.

[3] Thudichum; Lancet, Part 2, 420, 1859.

[4] Bobbs, J. S.: Trans. Indiana State Med. Soc., 68, 1868.

[5] Langenbuch, C.: Berl; klin. Wchnschr., 19:725, 1882.

[6] Musser, J. H. and Keen, W. W.: Cholecystotomy with Report of Two New Cases. Am. J. Med. Sc.,88:333-367, Oct., 1884.

[7] Mayo, W. J.: Observations on Surgery of Gallbladder and Bile Ducts. Ann. Surg., 30:452-458, 1898.

Diagnosis of gallbladder disease until 1924 depended entirely upon symptoms, clinical signs and clinical experience. At that time Graham and Cole introduced their method of cholecystography. Since then this test has been applied to practically all patients with pain in the upper right quadrant. Needless to say, it has been a great boon to sufferers of gallbladder disease as well as providing doctors with a more accurate means of diagnosis.

The normal gallbladder is about 8-10 cm. in length and is shaped like a pear. Its cystic duct is 3 cm. in length and passes downward and inward to join the hepatic and form the common bile duct.

The cystic duct has a number of folds in its mucous membrane, called Heisterian valves. These are of value inasmuch as they impede the passage of even small stones. The gallbladder has mainly three functions: (1) storage of bile and mixing it with mucus, (2) concentration, (3) expulsion. It is able to concentrate about seven times its normal content. This is an important fact inasmuch as the Graham-Cole function test is based upon its ability to fill, concentrate, and lastly to contract and empty its contents after a fatty meal.

Roentgen diagnosis of gallbladder disease may be divided into three groups: (1) those in which the opaque stones are seen in the flat film, (2) radio negative shadows of cholesterol stones as seen when gallbladder dye is used, (3) diagnosis may be based on the Graham-Cole function tests.

It is safe to say that a nonfilling, nonfunctioning gallbladder is a surgical gallbladder, providing there has been a failure to demonstrate its filling, following the use of reconcentration of oral or intravenous dye. It has been found, conversely, that even though a gallbladder may show good filling and even at times good function, it still may be a surgical gallbladder. At a later date this may show poor function or no function at all.

In discussing cholecystitis it is well to divide the subject into two main divisions: (1) cholecystitis with cholelithiasis, (2) cholecystitis without cholelithiasis. At the University of Oregon Medical School we further divide this into acute, subacute and chronic.

Acute cholecystitis is always associated with more or less marked hepatitis. The hepatitis is always the more marked in and near the gallbladder region, fading out and becoming less marked the farther away one goes from its area. Acute cholelystitis is usually brought on by impaction of a stone in the cystic duct. This is by far the rule, but acute cholecystitis may occur without stones. For 1938 the Mayo Clinic reported sixty-eight cases of acute cholecystitis with cholelithiasis, as against five cases of acute cholecystitis without cholelithiasis.

In acute cholecystitis pain comes on suddenly and develops rapidly. At first it is not well placed; it may be in the lower chest, epigastric area and often is referred to the back, right shoulder and even to the right side of the neck. Soon the pain becomes localized in the epigastrium and much more pronounced in the right side. Nausea and vomiting are close behind the onset of pain.

Cases of subacute cholecystitis form the group in which acute symptoms subside or those cases which never become quite so severe as to be classed as acute. Symptoms in the subacute group are never as pronounced as the acute group. Pain is not as severe and often these patients will have only slight nausea and vomiting, or at times vomiting will be entirely absent. The temperature and blood picture will be much lower.

It has been estimated that chronic cholecystitis exists in at least 15 per cent of people before the age of forty-five. After forty-five years about 30 per cent are troubled with cholecystitis. It is by far the most frequent single cause of indigestion. In chronic cholecystitis, with or without stones, surgery is indicated, providing the diagnosis has been arrived at after careful investigation has been made. Doubtful cases at University of Oregon Medical School are tried out under medical management. Those which persist are then subjected to surgery. It is our belief that those cases which are relieved by medical management should not come to surgery unless there is some very definite reason.

There is a tendency in these chronic cases to procrastinate too long. This may lead to increased technical difficulties as pointed out by Graham. For example, mortality in cholecystectomy after two attacks is 2-3 per cent; after three or more attacks 8 per cent; when jaundice is present 10-12 per cent and with pancreatitis it may be as high as 50 per cent. Then, too, the longer the infected gallbladder is allowed to remain, the more damage is done to the liver.

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[8] Robson, M.: Gall Bladder and Bile Ducts. New York, William Wood and Co., 1904.

Results from surgery in cholelithiasis are considerably better than in cholecystitis without stones. The operation of choice, as far as good results are concerned, is cholecystectomy. Needless to say, it should only be done when the case is a good risk, when the ducts and the cystic artery can be visualized thoroughly. In old people who are poor risks, and at times when the structures are edematous, it may be much the best policy to open the gallbladder, remove the stones, and drain the gallbladder with a good-sized rubber tube.

This is a report of one hundred consecutive cholecystectomies and cholecystostomies done in 1938-1939 at Multnomah County Hospital. In this series there are fifty-nine cholecystectomies for chronic gallbladder disease with one death, mortality rate 1.69 per cent. Included in these cases were eighteen with common duct drainage, none of which died.

There were thirteen subacute cases, in which cholecystectomy was done with only one death, and three acute cholecystectomies done within twenty-hour hours of onset of symptoms with no deaths.

There was a total of seventy-five cholecystectomies, chronic, subacute and acute, done with two deaths, a mortality rate of 2.66 per cent. Both deaths occurred in old people. One man, age 64, died from bronchopneumonia; one, age 60, twenty-one days postoperative, died from pulmonary embolism.

There were twenty-five cholecystostomies with three deaths. These are summarized as follows: one male, age 75, with marked empyema, died on the second day postoperative with bronchopneumonia; one, age 69, with a gangrenous gallbladder, died eleven days postoperative with bronchopneumonia, and the third, age 57, died from atelectasis and subphrenic abscess.

There were five deaths in the one hundred cases, with a mortality rate of 5 per cent.

One must remember that in a county hospital the cases are often senile, at times previously neglected and ill-nourished. Also the deaths occurred in ages 57 to 75 years. The duration of symptoms were from twenty-four hours in the acute cases to thirty-one years in the old chronic cases. Ages ranged from 28 to 80 years.

Among the hundred and thirty-one appendectomies were done and also two posterior gastroenterostomies; two duodenal fistulas were closed, one ventral herniorrhaphy; one duodenal ulcer was excised and one perforated gastric ulcer was closed in an eighty year old woman. There were no deaths in this group. It is our feeling that multiple operations should be done only when absolutely necessary and when conditions are ideal.

PREOPERATIVE TREATMENT

After one has decided that a gallbladder case needs surgery, it is our belief that these patients should be brought to operation in the finest possible condition. In the acute cholecystitis group it is the feeling of Dr. Joyce, chief of staff, and the surgical staff that, if a case is seen within the first forty-eight hours and the patient is in good condition, surgery should be done as soon as the preoperative care has been completed. These people are often dehydrated and have been vomiting. Intravenous glucose 500-1000 cc. of 5 per cent in plain water may be given. If there has been considerable vomiting, the glucose should be given in normal saline so that the chloride loss may be replenished. Needless to say, a Le Vine tube should be passed and the stomach completely aspirated before the patient goes to surgery.

If the case has gone over forty-eight hours or is a poor risk, one is better off to treat it conservatively until it "cools off." After ten days to three weeks these cases will respond to conservative treatment and come to surgery in much better condition. By that time the edema and engorgement in the gallbladder ducts and surrounding tissues will be almost entirely gone, thus making the operation far safer. At this later date one will be able to remove the gallbladder in most cases entirely. Needless to say, if the technical difficulties are such or the acute illness of the patient is such either in the acute or subacute stage as to make cholecystectomy dangerous, a simple drainage should be done along with removal of the stones.

During the period of cooling off, a close watch should be kept so that perforation does not occur, and if it does occur, immediate surgery should be considered. Perforation of the gallbladder with a resulting local, or worse still, a generalized peritonitis, causes great danger of acute and subacute infections of the gallbladder.

In those cases where cholecystitis is accompanied by jaundice, one must suspect a stone in the common bile duct or jaundice may be brought on by a cholangitis due to the infection with its resultant edema and swelling of the bile ducts.

Preoperative treatment of the jaundiced patient calls for determination every few days of the icterus index. Fluids, especially intravenous glucose (5 per cent), in quantities to 4,000-6,000 per day should be supplied. Vitamin K and bile salts are indicated so that the elevated clotting time of the patient may be lowered. Without question, blood transfusions are much better than even vitamin K and bile salts. The blood seems to possess qualities which are not supplied by vitamin K and fluids.

As long as jaundice lessens and the patient improves, as evidenced by a lowering of the icterus index, falling of the temperature, and a decrease in the white count, the patient is left alone. The ideal time for operation is when jaundice has disappeared and icterus has been normal for several days. At times one must compromise and the case go to surgery after liberal amounts of vitamin K, bile salts and blood transfusions have been used. The chronic cases, after proven to be surgical, come to operation as soon as possible.

TREATMENT

A straight right rectus incision is used. After a careful exploration of the stomach and abdomen has been done, attention is turned to gallbladder and ducts. Through the foramen of Winslow the common duct is carefully palpated. Its normal size is that of a lead pencil. We feel, if it is enlarged, it should be opened and examined with scoops and probes for stones. It is well then to wash out the duct, using a small rubber catheter and water so that one may be sure no small stone or stones are left behind, when the T tube is inserted and the duct sutured over it. Occasionally the question will arise as to whether a T tube will not produce a stricture. We have never seen this happen and believe it far less likely to occur, if a tube is used rather than closing the duct.

The gallbladder fundus is then grasped with a kelly forceps, then another at the ampulla, thus straightening out the cystic duct. It is carefully dissected free. After it is thoroughly freed and identified, two curved gallbladder clamps are applied and it is divided between them, the ends touched with iodine and the gallbladder dissected free from its bed. The duct is transfixed and ligated. The cystic artery is tied and the gallbladder bed sewed with plain 0 catgut.

As far as drainage is concerned, we employ a small Penrose drain routinely which is shortened on the third day and entirely removed on the fourth day.

POSTOPERATIVE TREATMENT

In postoperative gallbladder care we have a few standard procedures, namely, morphine for the first twenty-four hours, fluids 4-6000 daily for the first two or three days. The LeVine tube is used only if there is nausea and vomiting. It is employed along with the Wangensteen suction as long as necessary.

If a T tube has been employed, before it is removed it is well to inject either 10 cc. lipiodol or bromonal into the common duct through the tube. The tube is then clamped. Roentgenogram is taken immediately and again in fifteen minutes, thirty minutes, one hour and two hours. If the lipiodol does not go through by that time, one may feel the ampulla is closed either by a plug of mucus or a stone. If the lipiodol goes through in from one to two hours, one may go ahead and clamp the tube. If there is no pain it is quite safe to remove the T tube. Usually two weeks is long enough but at times, if the duct was greatly dilated at the time of the operation, the tube may be left in for six weeks or even longer in unusual cases.

SUMMARY

1. This is a report of one hundred consecutive cholecystectomies and cholecystostomies; fifty-nine chronic cholecystectomies with a mortality of 1.69 per cent and a total of seventy-five cholecystectomies, acute, subacute and chronic, with a mortality of 2.66 per cent; twenty-five cholecystostomies with three deaths. Total mortality 5 per cent.

2. Acute cholecystitis cases are operated upon immediately, if seen within twenty-four to forty-eight hours.

3. Common duct, if enlarged, should be explored and T tube left in place.

4. All patients should be thoroughly studied; fluids, especially glucose, given to preoperatives; vitamin K and blood transfusions given to jaundiced cases.

5. Penrose or cigaret drain should be employed in all cases.

TREATMENT OF CONGESTIVE HEART FAILURE*

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Before attempting to deal with our subject from a practical point of view, I would like briefly to refresh your memories in regard to some of the fundamental factors which produce the symptoms that we know as congestive heart failure. If we always keep in mind that the terms "heart failure" and "heart disease" have a vastly different meaning, and that heart failure is only a symptom-complex that follows heart disease, we can then treat the disease rather than the symptoms. We must also remember that we cannot hope to cure heart disease in the same sense that a surgeon cures a patient with acute appendicitis. Our aim must be directed toward returning the patient to a comfortable life with a more or less happy state of mind.

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*Read before the Fifty-first Annual Meeting of Washington State Medical Association, Tacoma, Wash., Aug. 25-28, 1940.

The chief function of the heart is to deliver a definite minute volume of blood to the various portions of the body to satisfy their specific requirements. This is usually accomplished in a normal healthy adult in a resting state, by a pulse rate of 68, systolic pressure of 120 and pulse pressure of 40. If the heart is unable to meet these demands, there is a tendency for the blood to accumulate in the pulmonary or systemic systems or in both, and then congestion appears.

Let us look at it in another way. The heart has a reserve of many times the energy that is required with the individual at rest, and it is when this reserve is gone that symptoms of congestion tend to appear. This reserve becomes limited when the burden becomes too great for the condition of the myocardium or when the heart muscle becomes weakened by disease. Both factors are usually present. Weakness of the myocardium may be the result of previous infections, such as rheumatism, syphilis or thyrotoxicosis, and the final break in compensation appears, following some more or less trivial ailment, as tonsillitis or a mild attack of influenza, or even changes in the emotional state as grief, sorrow or excitement. Or this myocardial weakness may be due to structural damage by fatty or fibrous degeneration, or by a deficiency in the quantity or quality of the blood supply to the heart. This deficiency may be the result of sclerosis or occlusion of the coronary arteries or of a severe anemia.

The increase in the burden of the heart may also be due to many factors such as tachycardia, either simple or paroxysmal; auricular fibrillation or flutter; pericardial effusion, chronic valvular disease or an increase in peripheral resistance. Strain may also be a factor, although this alone is seldom the cause unless the myocardium has been previously damaged by disease.

If we accept these two factors, i.e., increased burden and myocardial damage, as the cause of congestive heart failure, treatment should be directed toward decreasing the load on the heart and to strengthening the myocardium. Let us first deal with the methods used to decrease the burden on the heart.

REST

This is the most valuable and least respected therapeutic agent at our disposal. Absolute emotional, mental and physical rest, twenty-four hours a day, is the basis upon which all treatment is built. There is no substitute for it. No drug has yet been discovered to take its place. Since the work of the heart is decreased in the recumbent position, this is preferred, but many patients are more comfortable and breathe easier in the semierect position, but they must be maintained in this position with the least possible effort on their part. A comfortable bed with a backrest and four or five pillows is usually adequate. Support for the knees and thighs must not be overlooked. Care must be taken to protect the elbows.

Since the patient is unable to cope with his sympathetic friends, visitors are limited and conversation avoided, although in some business affairs it may be better to allow some discussion rather than subject the patient to the suspense of not knowing what is going on with his finances. In the home, a commode may take much less exertion than a bed-pan. He should not be led to believe at the beginning of treatment that rest is to be maintained for only a short period. The relief of dyspnea and edema do not represent a cure. The heart must be given adequate time to restore its proper reserve, and reestablish a normal venous pressure.

A frank talk on sexual habits is often appreciated by the patient, since he may be loath to bring up the subject himself. Intercourse uses approximately the same amount of energy as is required in a four mile walk, and so, during the period of rest, it is strictly forbidden. To insure sleep, morphine is invaluable. Many precious hours have been wasted in the initial stages of the illness by trying various forms of sedatives as bromides, chloral and the long list of barbituric acid derivatives. Sufficient morphine is given to insure absolute rest for the first three days. As far as I know, one need not fear addiction.

Duration of bed rest should obviously be related to the severity of the circulatory insufficiency. This means that the patient with a severe condition, whose signs and symptoms of failure have disappeared slowly, must remain in bed longer than one less severely ill. It is not a matter of how long we have kept a patient in bed, but rather how long he has been free from signs of failure. It should be perfectly obvious that a man, who has spent many weeks in bed with only a brief symptom-free period, should be kept there longer than one who has been quiet the same length of time, but has been symptom-free for a longer time. Usually a safe rule to follow is, that the longer it takes to restore compensation, the longer the period he must be in bed when symptom-free. Three weeks of rest, after distention of the veins in the neck disappears, should be the minimum in the average case. And after he is out of bed, periods of prophylactic bed rest should be instituted, for it is easier to prevent reoccurrence of failure than to correct it when compensation fails.

DIET

At the beginning of congestive failure, diet is an essential part of the management, but the average physician seems to run riot on the question. After reading all the available literature, one is at a loss to know if his patient should be put on a high or low protein diet, little or much fluid, or if he should be on any special diet at all. For some time the Karell diet has been used. This is 200 cc. of milk given every six hours, day and night, with sometimes a few crackers added. Its success seems to be due to its limited fluid and low salt. However, it is tiresome, and many patients are dissatisfied. At best it should never be continued for more than two or three days.

I have found that a fruit diet is much better tolerated, and even diuresis may be promoted because of the high potassium content, but care must be taken or the patient oversteps the limit set which is about three pounds per day. Some patients do well for the first two or three days on a grape diet. Any kind of grapes may be used; he eats grapes when he is hungry, and he eats them to quench his thirst. This provides him with sufficient calories and keeps fluids and salt restricted. Other fruits and raw vegetables may be added if desired, so that he may be allowed a considerable variety in the form of a fruit-vegetable salad.

Salt substitutes may be used to make the food more palatable, provided the sodium ion is entirely eliminated. If more food is needed, baked potato, eaten without salt, but with a little butter and brown sugar is often appreciated. Care must be taken not to deprive the patient of protein too long, and many patients with edema do well on a high protein diet. Salt and foods with a high sodium content are restricted as long as edema is present.

Fluids are limited to 800 to 1100 cc. per day. Fruit and vegetables are considered as liquid. Between meals glucose may be given which adds to the caloric value and calls for little digestive effort. As much as one-half a pound may be given in twenty-four hours. When gastric congestion produces vomiting, it may be the only food which is retained. Fats are reduced to a minimum, for with the slowing all digestive processes, they may be poorly assimilated. Flatulence may be relieved by a carminative, preferably aromatic spirits of ammonia. This tends to lessen dyspnea and so relieve the heart.

DIGITALIS

This is the drug of choice, though it may have little effect in about one-third of cases with normal rhythm. It acts best in those cases where both hypertrophy and dilatation are present. Its action is quite miraculous when properly administered, while it is really useless if the dose be too small, and it is a dangerous toxic agent in excessive amounts. It works in two ways, for it has a direct action on heart muscle and it also stimulates the vagus nerve, thus tending to produce an auriculoventricular block. In auricular fibrillation the vagal stimulation actually increases the fibrillation of the auricle, but this in turn increases the auriculoventricular block and, therefore, causes ventricular slowing. It has no direct effect on the coronary arteries, but indirectly the coronary flow is altered, since it is dependent on the rate and degree of contraction of the whole heart.

All cases of tachycardia do not require digitalis. It is often prescribed in cases where the increased rate may be due to endocarditis or hyperthyroidism. When this is done, there is no slowing of the pulse, and the condition is further complicated by the undesirable effects of digitalization. Again, it is often withheld in cases of bradycardia associated with decompensation because it is thought that digitalis will further slow the pulse. This fear is not justified. As far as I know, there is no contraindication for digitalis therapy as long as the need for the drug exists.

In the use of digitalis, only two things must be kept in mind: (1) sufficient digitalis must be given to produce its therapeutic effect, and (2) thereafter enough must be given to maintain this effect. No fixed dosage should ever be used, since no two patients require the same amount. Except in emergencies, rapid digitalization is to be avoided. The proper dosage is that amount which will produce and maintain the therapeutic effect without producing nausea or other signs of digitalis intoxication. The toxic and therapeutic effects of the drug are not necessarily of the same magnitude and a severely damaged myocardium may exhibit toxic manifestations after small doses.

It is my opinion that the glucocides of digitalis, being chemically standardized, can be used to greater advantage than the whole leaf. The glucocides of digitalis lanata, rather than purpurea, are now being used much more commonly, and I derive a great deal of personal satisfaction from the use of digilanid which is a combination of the A, B and C fractions of digitalis lanata. More recently cedilanid, the C fraction alone, is providing all the desired effects with few of the distressing symptoms which we so commonly see with digitalis therapy. In my hands it has been a great help in establishing digitalization, but digilanid seems to have more value for maintenance.

In emergencies digilanid may be given intravenously, producing its maximum effect in a short time. Cedilanid intravenously produces a slowing of the ventricular rate in about twenty minutes. In this way it has taken the place, to a large extent, of oubain or strophanthin, which should not be used, if digitalis has been previously administered. Digilanid is offered in a distinctive white sugar-coated tablet, so that the patient is not aware that digitalis is being administered, as many patients object to taking it. Furthermore, it is not expensive and does not deteriorate with age. In certain cases digilanid may be given by rectum in suppositories and its effect in this manner of administration may be greater than when given by mouth, since, while the rate of absorption remains about the same, it reaches the heart before going through the congested portal system.

Other drugs which produce a digitalis-like action have been used. The chief ones are strophanthin and squill. Strophanthin is given intravenously and acts rapidly but it has certain disadvantages. Ventricular fibrillation and death may result in a few minutes after administration. A minimum period of three days must elapse between the last dose of digitalis and the first injection of strophanthin. Oubain is given in one-half doses of strophanthin and is less cumulative than digitalis but this also cannot be given by mouth as absorption is too uncertain. It is my opinion that in emergencies cedilanid or digilanid given intravenously have all the advantages and none of the disadvantages of the strophanthins.

Squill has been used in congestive failure for many years. The waterinsoluble glucocides (scillaren A and B) have recently been isolated. Since they rarely produce the gastrointestinal disturbance so often seen with the older preparations, they may be used in some patients with advantage. I have used scillaren B with good results in a few cases when the patient is fearful of the administration of digitalis.

VENESECTION

When the jugulars are distended with the patient propped up, the removal of from 250 to 500 cc. of blood often produces dramatic prompt relief to the right ventricle. An exact estimation of the venous pressure should be made before the venesection is repeated. The idea of reducing the quantity of blood by the use of tourniquets on either extremities fails to produce the same fall in the venous pressure in congestive heart failure as direct blood loss. If a delay of a few hours is permissible, the same effect may be accomplished by the use of diuretics. This brings us to the next consideration on our program to lessen the load on the myocardium.

DIURETICS

When the above mentioned methods fail to give a satisfactory response, diuresis may be produced by direct action on the kidney. Here the xanthine products may be of great value. They act on the glomuleri by increasing filtration, but their action soon wears off and they have a tendency to produce nausea. In their use one fact should be borne in mind, the more soluble the product, the more tendency there is to produce nausea. They are very commonly improperly administered. For the best diuretic effect they should be given in larger doses at short intervals every second or third day.

The insoluble theobromine alkaloid often produces surprising diuresis when given in this manner. Of all the xanthine products, theophylline produces the greatest results. It, too, should be given in large doses at short intervals, and may produce diuresis when mercurials fail. It should never be given to epileptics. Aminophylline, given intravenously or per rectum, may be substituted but its diuretic action is less than theophylline. It has absolutely no effect when given by mouth.

Let us consider the mercurials which are the diuretics of choice. They have added a considerable span of useful living to the patient who has been previously disabled by edema. Their only contraindication is in severe renal insufficiency. Ordinarily they are safe to give when the urine has a specific gravity of 1,020 or above, and a high color. But care should always be exercised in older patients, especially in the presence of colitis, fever or following severe cerebral hemorrhage. We must also guard against producing toxic symptoms from digitalis following the use of the mercurials intravenously in a patient already digitalized.

For years salyrgan has led the field and recently it has been combined with theophylline. Of late, mercupurin has become a real rival, and since it has a camphoric acid base rather than the more irritating salicylic acid base of salyrgan, its use is steadily increasing. It is given in one-half to two cc. doses intravenously every two to four days, and its action may be enhanced by preceding it with ammonium chloride. It should not be given until several doses of digitalis have been administered. The first dose should not exceed one-half cc., since a marked diuresis may result which adds a great burden to the heart. Also, there may be an idiosyncrasy to the drug, or toxic manifestations as colitis may result. If prompt diuresis does not result, sufficient time for the mercury to be eliminated should be allowed before a second dose is given.

Intraperitoneal or intrapleural injections may be given in ascites or in pleural effusion respectively, and in these cases diuresis usually lasts for forty-eight hours. Suppositories of mercupurin may be used, and while not as efficient, may produce a good effect. The fears of renal suppression and mercurialism with these preparations has been somewhat exaggerated. When other diuretics fail, gum acacia given intravenously often produces the desired effects.

OXYGEN

In advanced failure with cyanosis, oxygen, given with a nasal catheter, is often useful and may be followed not only by relief of dyspnea and cyanosis, but also in a slowing of the pulse, diuresis and diminution of edema. This effect may be seen after oxygen has been administered for about three hours, although in many cases the improvement is more gradual. Often the cyanosis disappears but there is no relief from dyspnea. The addition of a small amount of helium to oxygen may greatly relieve the effort to breathe.

TOTAL THYROIDECTOMY

In a few cases, where digitalization, combined with rest, diet and diuretics, fails to produce improvement, total thyroidectomy of the normal thyroid gland has been recommended. The lowered basal metabolic rate decreases the work of the heart and allows a few patients to be out of bed without recurrence of symptoms. These cases must be carefully selected, and following the removal of the gland sufficient thyroid extract should be given to maintain a basal metabolic rate of about minus thirty. It must be borne in mind that the results may prove disappointing.

With regard to the question of improving the myocardium, our therapy is quite limited. In severe anemias, appropriate treatment by liver, iron, arsenic and blood transfusions is indicated. In cases of coronary artery disease, the circulation may be improved with theobromine or aminophylline. Recently attempts have been made, with some success, by surgically fixing the omentum or pectoral muscle to the myocardium with an aim to increasing the circulation to the heart muscle. I have had no experience with this. As mentioned before, glucose is an excellent cardiac food.

In conclusion, treatment is not likely to be effective, unless coordinated with unceasing clinical observation, and one should not stop treatment of congestive heart failure for apparent lack of response as often compensation is restored when least expected.

VITAMIN B_1 FOR ACUTE HEART FAILURE

CASE OF A TWO-AND-A-HALF-YEAR-OLD GIRL

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My first contact with this patient was when I was urgently called in the night by the father because the parents were wakened by the child "having difficulty in getting her breath". The father thought the child had "either a bad cold or the flu" because there was considerable coughing.

The patient, a well-developed, well-nourished little girl of two and a half years, was lying in bed, obviously suffering great respiratory embarrassment, since all the accessory muscles of respiration were in action without enough oxygen being supplied for talking or crying. Lips and fingernails were slightly cyanotic. She was an only child and there was every indication that economic and other extrinsic factors were highly satisfactory.

A hurried examination showed respiration 70 per minute, pulse about 160 but regular, a rather frequent but non-productive cough and temperature normal. A brief history was helpful in the differential diagnosis. About eight months previously the parents noticed that the child had occasional palpitation with periods of difficult breathing, not so severe as the present. Four months before this attack they were advised by competent authority to have the tonsils removed. This was done. But instead of the heart condition improving thereafter the episodes of palpitation and difficult breathing became more frequent and more severe.

I administered at once hypodermically 10 mg. thiamine hydrochloride in 0.57 per cent salt solution. Within five minutes the child was asleep, respiration became distinctly easier, went down to 50 per minute and the pulse slowed to 110. I left some of the solution, in concentration of about 12 mg. thiamine hydrochloride to the teaspoonful, to be given by mouth if more trouble should arise in the night. The parents were requested to bring the child to my office the next day for further observation and study.

The little patient was in good condition the next afternoon, with pulse and respiration normal. She had slept four hours after the hypodermic medication with vitamin B_1. The parents then gave her a teaspoonful of the solution by mouth, after which she slept four more hours. Since that time she has been taking daily three teaspoonsful of a preparation of vitamin B complex syrup of known potency. Her trouble has not recurred.

SUMMARY AND CONCLUSIONS

An acute, severe attack of dyspnea in an otherwise normal appearing child two and one half years of age was apparently relieved at once by 10 mg. thiamine hydrochloride solution hypodermically.

Since twenty-two months of age she had been subject to these attacks in increasing frequency and severity. At twenty-six months her tonsils had been removed but the attacks thereafter occured more often and more severely.

Vitamin B_1 solution parenterally should be unhesitatingly tried in all cases of acute heart failure. Vitamin B complex or vitamin B_1 alone may well be used prophylactically before any severe operative ordeal such as tonsillectomy, particularly when there is evidence of cardiac weakness.

ANEMIA IN COLLEGE WOMEN*

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College girls exhibit various degrees of anemia in common with their younger adolescent sisters. In the mild forms commonly seen at the college age level it is often difficult to determine whether the cause is defective blood formation, excessive blood destruction or the result of intermittent blood loss. Simple achromic anemia is encountered in college women more commonly than previous statistics indicate. It is characterized by a deficiency of hemoglobin which is out of proportion to the deficiency in the number of red blood cells.

In ordinary secondary anemia the deficits in hemoglobin and in red cells are roughly equal, when measured by the color index. The color index is a formula indicating the amount of hemoglobin in each erythrocyte. It is expressed as a fraction H/C, in which H stands for percentage of hemoglobin and C is the red cell count divided by 5 million. The average color index for normal blood is 0.85 and this would be obtained in secondary anemia when the deficit in hemoglobin parallels that of red cells. In achromic anemia the color index is well below 0.85 and in the severe form called chlorosis it falls to a range of 0.30-0.65. There are various degrees of achromatosis and only the most severe should be diagnosed chlorosis. Color indices ranging from 0.66 to 0.70 are called chlorotic anemia in this study, while those ranging from 0.71 to 0.80 are called achromic anemia.

Blood studies done on 364 Stanford women during the past two years suggest that achromic anemia is found just as frequently as the secondary type at the college age level. In our study there were 145 instances of hemoglobin below 70 per cent which is low enough to be classified as chlorosis according to Greene.[1] However, the red blood cell counts were relatively high, resulting in low color indices in only eleven of these cases. The lowest hemoglobin in our series, 42 per cent, was found with a red cell count of 3,920,000, producing a color index of 0.53, and is consistent with diagnosis of chlorosis.

Table 1 shows the color indices for our 145 low hemoglobins. Eleven cases could be diagnosed chlorosis by the color index classification.

TABLE 1

COLOR INDICES FOR 145 CASES OF LOW HEMOGLOBIN

	Chlorosis	Chlorotic anemia	Achromic anemia	Secondary anemia
No. of cases..........	11	25	54	55
Color indices	0.30-0.65	0.66-0.70	0.71-0.80	0.81-0.90

Hemoglobins all below 70 per cent Sahli.

Table 2 shows the range of red blood cell counts with average hemoglobin estimations for the whole series included in the study.

TABLE 2

RANGE OF RED BLOOD CELL COUNTS WITH AVERAGE HEMOGLOBIN ESTIMATIONS

Number of Cases	*Range of the Red Blood Cell Counts*	*Average Hemoglobin*
6	1,200,000-3,000,000	48.6
34	3,100,000-3,500,000	55.2
172	3,600,000-4,000,000	67.1
117	4,100,000-4,500,000	75.1
29	4,600,000-5,000,000	84.6
6	Above 5,000,000	91.8

Observations made on 364 college women who had complaints or symptoms suggesting anemia.

Table 3 summarizes the range of hemoglobin estimations with the average red blood cell count at different levels.

TABLE 3

RANGE OF HEMOGLOBIN ESTIMATIONS WITH AVERAGE RED BLOOD CELL COUNTS

Number of Cases	*Range of Hemoglobin Per cent*	*Average Red Blood Cell Count*
3	40-49	2,500,000
15	50-59	3,240,000
127	60-69	3,792,000
201	70-79	4,252,000
15	80-89	4,671,000
3	90-99	5,133,000

Blood studies done on 364 college women.

Another diagnostic point, consistent with the classification of chlorosis and chlorotic anemia, is the remarkable way in which these students responded to simple iron tonic treatment.[2] Iron was given in several forms as follows: lextron, feosal, fe-cu-phyll, jeculin, reduced iron, and iron ammonium citrate.

Table 4 contrasts the results of four different kinds of iron therapy for increase of red blood cell counts and percentage gain in hemoglobin.

Girls who received only lextron made relatively more gains in red cell count than in hemoglobin, while those who received reduced iron, feosal, or iron ammonium citrate made larger gains in hemoglobin than in red cells. Jeculin gave the best results in stimulating increased numbers of red blood cells and also building up hemoglobin. Fe-cu-phyll was very consistent in increasing both red blood cell counts and hemoglobin, but appears to be less efficient than jeculin. Both jeculin and fe-cu-phyll contain concentrated vitamins.

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*From Women Students' Health Service, Stanford University.

[1] Greene, C. L.: Medical Diagnosis; Manual for Students and Practitioners. Blakiston's Son & Co., Philadelphia, 1905.

[2] Powers, J. H. and Murphy, W. P.: Treatment of Secondary Anemia. J. A. M. A., 96:504-507, Feb. 14, 1931.

TABLE 4

INCREASE IN RED BLOOD CELL COUNTS AND PERCENTAGE GAINS IN HEMOGLOBIN CONTRASTED FOR FOUR DIFFERENT KINDS OF IRON THERAPY

Lextron		*Reduced Iron, Feosal, Iron Ammonium Citrate*		*Fe-Cu-Phyll*		*Jeculin*	
Percentage Gain in Hemoglobin	*Increase in Red Blood Cell Count*	*Percentage Gain in Hemoglobin*	*Increase in Red Blood Cell Count*	*Percentage Gain in Hemoglobin*	*Increase in Red Blood Cell Count*	*Percentage Gain in Hemoglobin*	*Increase in Red Blood Cell Count*
5	700,000	6	1,500,000	4	1,200,000	5	1,400,000
0	400,000	8	500,000	15	1,100,000	16	1,100,000
11	800,000	3	100,000	2	400,000	6	1,800,000
7	1,300,000	14	300,000	7	400,000	6	600,000
0	200,000	13	500,000	11	100,000	5	600,000
7	1,100,000	10	400,000	14	400,000	19	1,200,000
4	1,250,000	13	2,100,000	4	300,000	14	500,000
2	400,000	6	1,500,000	0	1,100,000	11	1,700,000
10	1,500,000	4	900,000	4	300,000	7	600,000
0	900,000	10	500,000	5	200,000	4	500,000
Averages—							
4.6	855,000	9.4	820,000	6.6	550,000	9.3	1,000,000

Effects of iron therapy on four groups of ten girls, each matched for symptoms.

Table 4 summarizes effects of iron therapy on four groups of ten girls each. The ten cases in each treatment group were matched as well as possible. For example, one girl in each group started therapy with a red cell count of 3,500,000 or less and had a hemoglobin below 60 per cent. Three in each group started therapy with red cell counts in the range from 3,600,000 to 4,000,000, and had hemoglobins between 61 and 70 per cent. Five in each group started therapy with red blood cell counts in the range from 4,100,000 to 4,500,000 and had hemoglobins between 71 and 80 per cent. And one girl in each group started therapy with red cells and hemoglobin above the last level.

Treatment was continued for from two to six months, but it was not possible to match treatment intervals or to calculate comparable doses of the various tonics.

In simple achromic anemia and in the chlorotic type as seen in our college girls, the deficiency of hemoglobin in each erythrocyte reduces its ability to combine with oxygen. Symptoms noted in the complaints of these girls no doubt are traceable to loss in oxygen-combining and oxygen-carrying properties of the erythrocyte. The degree of impairment of normal body functions is probably the direct result of interference with cell nutrition and function, and may be expressed in a variety of ways.[3, 4]

Complaints and symptoms noted in this study may be summarized in the following way as seen in table 5.

Pallor had to be judged by examining ear lobes and conjunctivae, since the modern girls paints her lips and finger nails.

TABLE 5

COMPLAINTS AND SYMPTOMS OF 364 ANEMIC STUDENTS

	Per cent
Dysmenorrhea	54
Poor muscle tone	50
Fatigue	49
Poor Posture	48
Pallor	40
Loss in weight	25
Low basal metabolic rates	25
Frequent upper respiratory infections	20
Anorexia	16
Nervous irritability	15
Skin rashes and acne	15
Vertigo	6
Headache	4
Syncope	3
Palpitation	3
Low blood pressure	2

Percentage of girls in this series exhibiting various physical signs accompanying anemia. In order of frequency.

Dysmenorrhea is occasionally caused by anemia, when the red blood cells fail to carry sufficient oxygen. When anemia is severe or of long duration, the myocardium may be involved, and dysmenorrhea then develops as a result of myocardial weakness. This type of dysmenorrhea was not observed in our series, but it is possible that our cases complaining of palpitation, syncope, low blood pressure and dizziness could be explained on this basis.[5]

Systolic heart murmurs heard best over the pulmonary interspace have been described as being caused by anemia, but we were unable to identify any murmurs which disappeared when the blood picture returned to normal.

More than half of the girls in this series, who had chlorosis, chlorotic or achromic anemia, complained of dysmenorrhea in some form, menorrhagia, metorrhagia, deficiency or irregularity of flow.

Dysmenorrhea appeared in 54 per cent of all cases and was the most frequent complaint. The high frequency of menstrual disturbances among girls with the achromic anemias is consistent with

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3. Macleod, J. J. R.: Studies in Anoxemia.
4. Rakestraw, N. W.: Chemical Factors in Fatigue. 1931.
5. Muelengracht, E., Watson, C. J. and Rhoads, C. P.: Symposium on Blood and Blood Forming Organs. University Wisconsin, 1939.

the known age incidence of chlorosis.[6] The statement has been made that 99 per cent of chlorosis occurs between ages fourteen and twenty-five, and appears to bear a definite relationship to the establishment of catamenia. Since this type of anemia always appears during the adolescent period, it is thought to represent an endocrine imbalance during the time of sexual development.

One hundred forty-five girls in this study had hemoglobins below 70 per cent, and in ninety of them the reduction in hemoglobin was out of proportion to the diminution in the number of red blood cells which produces low color indices characteristic of the achromic anemias.

A study of body proportion or body build shows that 91 of the 145 girls could be classified as slender built with width-length indices more than one standard deviation below the mean for their ages.[7] Linear type girls mature sexually at a later age than lateral type and have lower blood pressures, poorer musculature, more fatiguability, and are more high strung and nervous.[8] A general description of the linear type girl appears to make her particularly predisposed to the symptoms and complaints noted in this study of the achromic anemias.

It seems reasonable to conclude that certain constitutional inadequacies play a part in the development of these anemias.

CONCLUSIONS

1. Simple achromic anemia is encountered in college women more commonly than previous statistics indicate.
2. Blood studies done on 364 Stanford women showed achromic anemia just as frequent as the secondary type.
3. Eleven cases were diagnosed chlorosis by the color index classification.
4. Good results in blood building were obtained with simple iron tonic therapy.
5. Effects of various iron tonics in increasing hemoglobin and red blood cell counts were noted on four groups of ten girls each, matched for symptoms.
6. Fifty-four per cent of the girls with hemoglobins below 70 per cent complained of dysmenorrhea.
7. Sixty-three per cent of them were classified as slender-built.
8. Certain constitutional inadequacies may play a part in the development of anemias.

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[6] Hawkinson, L. F.: Ovarian Hypofunction Previous to Climacteric. Western J. Surg., 47:584-588, Oct., 1939.

[7] Pryor, H. B.: Width-Weight Tables, Stanford Press, 1936.

[8] Pryor, H. B. and Carter, H. D.: Phases of Adolescent Development in Girls. California & West. Med., 48:89-94, Feb., 1938.

CLINICAL DIAGNOSIS CONFIRMED

Kenelm Winslow, M.D.
SEATTLE, WASH.

The more difficult the case, the more exciting is its solution. As in jigsaw puzzles, signs and symptoms that will not fit into the picture cannot be ignored. Two cases are reported, not only because of their intrinsic interest, but chiefly because the clinical evidence was so completely confirmed in all details at operation, which is so much more satisfactory for patient and doctor than autopsy.

Case 1. A married woman of thirty-five, without previous history of menstrual, pelvic or abdominal disturbance, was suddenly seized at night with severe pain in the left iliac region, radiating downward into the thigh. A neighboring doctor diagnosed renal colic and gave morphine. I saw her two days later, the pain having shifted into the right iliac region. The pain was not acute and localized tenderness, muscle spasm and vomiting were absent. Therefore, it seemed that the more usual inflammatory lesions in this region could be excluded. The urine was normal. Bimanual examination discovered an enlarged firm uterus in midline position, and a sense of increased resistance in the left cul-de-sac without tenderness.

Pain became severe in right iliac region on the fourth day, and for the first time there was moderate fever, with a leukocytosis of 16,000, containing 90 per cent of polys. Palpation of the abdomen revealed what seemed like an overfull bladder, which did not disappear on micturition. With the previous history of shifting pain from one lower quadrant to the other, and the discovery of a round, smooth, tense tumor over the pubes, the diagnosis now became evident. Moreover, the sudden occurrence in a woman of pain in a tumor of long standing in this region and of this character, followed by severe pain, fever and leukocytosis, confirmed the diagnosis of an ovarian cyst with twisted pedicle. The pain was evidently due to twisting of the pedicle, and when this became sufficient to shut off the circulation, then engorgement, inflammation and hemmorhage into the subadjacent tissues, with fever and leukocytosis, would naturally ensue.

Presence of an ovarian cyst with twisted pedicle, with probable hemorrhage into the surrounding tissues and danger of fatal complications, was thoroughly explained to the patient, and operation was urgently advised. Dr. Paul Gunby was called and concurred in the diagnosis.

At operation he delivered an ovarian cyst about the size of a small cantaloupe, to use one of Dr. Charley Mayo's favorite agricultural similes, and demonstrated beautifully the glistening, tightly strangulated and twisted pedicle, with intense engorgement and hemorrhage into the tissues of the fallopian tube and broad ligament. The pedicle was twisted around on its axis one and a half times, or more precisely, its torsion equaled 540 degrees. The cyst lay on top of the uterine fundus, arising from the left ovary and extending into the right cul-de-sac, to which it was very slightly attached by filmy adhesions. The patient made an uninterrupted and complete recovery.

Case 2. More baffling and interesting is the case of a sturdy miner of 52 who had been working with pick and shovel on his claim, and living alone in a cabin near Nome. He came to Seattle because of a sudden attack of excruciating pain that overcame him while sitting in his shack after dinner. The patient thought he was dying and felt that something was "bursting inside," and had great difficulty in "getting his breath." He was apparently in a state of severe shock, being all the while drenched in sweat. He managed to crawl into bed, where the pain continued for some four or five hours, leaving him in a state of complete exhaustion and bed-ridden for three days. On the fifth he succeeded in staggering all day through snow, with frequent rests, to the nearest habitation five miles away. Here he remained until he sailed from Nome three weeks later.

Before this episode he had suffered for two years from frequent attacks of pain below the heart and in the epigastrium. The pain often radiated upward into the shoulders and sometimes down the left arm. Pain only came on while he was working or walking, and stopped within a few minutes when he sat down or stood still. He was in splendid physical condition otherwise, of average height and weighed 185 pounds. He lost weight from poor appetite after his violent attack and had regained much of his strength when he reached Seattle, but had low sternal pain when walking at all briskly.

Any third year medical student would make an instant diagnosis of angina pectoris, followed by its common sequel, coronary occlusion, from this history. The patient never had any symptoms of dyspepsia after eating, and ate many raw apples and even baked beans after his violent colic, without discomfort. Moreover, a careful physical examination was negative. He had free HCl of 16 degrees, and normal serum protein. The laboratory report gave him 126 per cent of hemoglobin, surprising if it were not for the different standards now in use.

The only other illness recalled was a prolonged spell of heartburn and indigestion when he was twenty-two. There were, however, several objections to the diagnosis of coronary artery disease. Angina in a manual worker is rare. In a ten year-around-service in the old county hospital, we had only one case of angina, and the patient was a clerk. Day laborers seem devoid of a sympathetic nervous system, or it atrophies from lack of use. The impunity with which the patient could eat such indigestible substances as raw apples and baked beans seemed to exclude organic gastric disease, and yet we were dealing with a man toughened to a high degree by long hard labor, and inured to the privations of an arctic climate. Then, on further inquiry, it developed that he was very "sore" over his epigastric region for weeks after his severe colic, and that for a long time eating meat gave him distress.

Mulling over the case it seemed not improbable that the patient had had a chronic gastric ulcer for a long time, of the penetrating type, with local peritonitis and formation of adhesions producing pain, and simulating angina, on exercise, that finally the ulcer had perforated with the consequent violent colic and shock. With this idea in mind the patient was referred to Dr. T. W. Blake for roentgen study. He at once discovered a deformed duodenal cap without visible crater, and concluded it represented a healed duodenal ulcer. This might have occurred when the patient had the long spell of heartburn at twenty-two. Duodenal ulcer did not accord with our theory, the symptoms, or with the rather low gastric acidity.

Fortunately, Dr. Blake was not wholly satisfied with his first examination and repeated it with a very small quantity of barium in the stomach. To our mutual delight the films revealed a distinct filling defect just above the angle of the stomach, on its lesser curvature and somewhat posteriorly, indicating a penetrating ulcer about 1.5 cm. in diameter. The next finding needed to support the theory of epigastric pain on movement should be the presence of strong adhesions connecting the ulcer area of the stomach with neighboring parts. Surgery was therefore indicated. But first the possibility of coronary disease was excluded as far as possible.

Physical examination and roentgen films of the heart were negative, and also electrocardiograms made by Dr. E. M. Chew. Such negative findings are not final but reduce the possibility of coronary disease about fifty per cent.

Dr. Gunby operated on the patient after a few days of hospital preparation. On exploring the site of the gastric ulcer he found a very strong band of dense adhesions, attached to the base of the ulcer and spreading out in fan-shape to become adherent to the gastrocolic omentum. The lesser peritoneal cavity was obliterated by less dense adhesions. The pathology indicated previous perforation of the gastric ulcer into the lesser peritoneal cavity. A well marked scar was observed on the anterior surface of the duodenum, just below the pylorus, produced by an old and apparently perfectly healed ulcer.

Dr. Gunby decided to do a partial gastrectomy, in which the site of the gastric ulcer was removed and approximately the lower three-eighths of the stomach. The ulcer was of the typical punched-out, callus and penetrating variety, measuring 1.5 cm. in diameter, and about 1 cm. in depth. The stomach was divided distally just below the pylorus. The duodenum, including the site of the healed ulcer, was turned in and closed by sutures. The whole lower, open end of the normal stomach was anastomosed to the jejunum after it had been brought up over the anterior surface of the transverse colon.

The anastomotic stoma thus formed was more than twice as large as that produced in the usual gastrojejunostomy, but appears to be wholly satisfactory. Microscopically, the ulcer proved to be benign. The patient made an uneventful recovery, except for considerable bloody oozing from the stomach for the first two days. A citrated blood transfusion was given, but even after the operation and hemorrhage the laboratory reported the hemoglobin was 106 per cent. Some of the modern blood standards are both amazing and comforting.

Now, some three months after the operation, the pains on exercise have gone and the patient is gaining rapidly in weight and strength, and has no trouble except when he tries to eat more than his stomach can comfortably hold. The symptoms simulating angina and coronary thrombosis were undoubtedly wholly of gastric origin and have been completely cured by surgery.

AMERICAN COLLEGE OF SURGEONS SECTIONAL MEETING

A Sectional Meeting of American College of Surgeons, in which the states of Oregon, Washington, California, Nevada, Idaho, Wyoming, New Mexico, Arizona, Colorado, Montana and Utah will participate, will be at the Hotel Utah in Salt Lake City, March 26-28. The five approved hospitals of Salt Lake City will provide an excellent clinical background for the College meeting. The University of Utah School of Medicine will arrange anatomic, pathologic and other demonstrations. Distinguished surgeons from all parts of the country will address the scientific sessions and lead the conferences and panel discussions.

A full program includes morning and afternoon papers March 27 and 28 with motion pictures afternoons and evenings on general surgery; eye, ear, nose and throat surgery. A few of the subjects that will be discussed at the evening scientific sessions are: "Management of Patients with Renal Lithiasis;" "Peripheral Nerve Injuries;" "Thrombophlebitis;" "Compound Fractures;" "Newer Suggestions in the Field of Cancer."

A preliminary list of speakers includes leading surgeons from Los Angeles, Oakland, San Francisco and Woodland, California; Denver, Colorado; Great Falls, Montana; Salt Lake City, Chicago, Cleveland, New Orleans, New York City. From northwest states Ralph C. Matson and Adalbert G. Bettman of Portland, and Paul G. Flothow of Seattle.

POSTGRADUATE LECTURES

During the year postgraduate courses of lectures are scheduled for the profession in our three states. In order that these courses may become well known, and be presented to the readers of this journal from month to month, they will be hereafter listed under the above heading with certain details pertaining to each as they may be received for publication. In this issue appear data which have been received descriptive of each course of the lectures. In the future issues it is expected that these will be supplemented as more information is received concerning each of them.

OREGON

PORTLAND ACADEMY OF MEDICINE

This course of lectures will be held in University of Oregon Medical School Auditorium February 13-15, 8 a.m. and 1 p.m.

The speaker will be Owen H. Wangensteen, Professor of Surgery, University of Minnesota Medical School, and Surgeon-in-chief, University of Minnesota Hospital.

Subjects of lectures:

1. Studies in Etiology of Appendicitis.
2. Practical Aspects of Therapeutic Problem in Bowel Obstruction.
3. Ulcer Problem Viewed from Standpoint of Etiology and Therapy.

UNIVERSITY OF OREGON MEDICAL SCHOOL ALUMNI ASSOCIATION GENERAL POSTGRADUATE SESSION MARCH 17-21.

University of Oregon Medical School Alumni Association Postgraduate Session and Ernst A. Sommer Memorial Lectures will include medicine, pediatrics, surgery, gynecology, ophthalmology and otorhinolaryngology.

Visiting lecturer will be Donald Guthrie, Chief, Guthrie Clinic, Sayre, Pennsylvania, and W. S. Middleton, Dean, Wisconsin Medical School, Madison, Wisconsin.

NOBLE WILEY JONES LECTURESHIP

Auditorium, University of Oregon Medical School, April 3-4.

Speaker will be Bradley Patten, Professor and Director of Anatomy, University of Michigan Medical School.

OREGON ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

University of Oregon Medical School and Oregon Academy of Opththalmology and Otolaryngology will hold its postgraduate course of lectures March 31-April 5.

Guest speakers will be Frank E. Burch, Professor of Ophthalmology, University of Minnesota Medical School and Harold I. Lillie, Head of Section of Otolaryngology and Rhinology, Mayo Foundation.

COURSES FOR WHICH INFORMATION WILL BE PUBLISHED LATER

May 6-8 — University of Oregon Medical School Postgraduate Session in Medicine.

May 12-14 — Portland Academy of Medicine.

Sept. 2-3 — Portland Academy of Medicine.

Sept. 3-6 — Oregon State Medical Society Postgraduate Session.

WASHINGTON

PUGET SOUND SURGICAL CLUB

Seattle, March 15

Puget Sound Surgical Club will hold its annual meeting at Seattle, March 15.

Guest speaker will be Idys Mims Gage, Associate Professor of Surgery, Tulane University of Louisiana School of Medicine.

SPOKANE SURGICAL CLUB

April 19

Spokane Surgical Club will hold its annual meeting April 19, featuring clinics and lectures.

Guest speaker will be Alfred Blalock, Professor of Surgery, Johns Hopkins University School of Medicine.

TACOMA SURGICAL CLUB

May 3

Tacoma Surgical Club will hold its annual meeting with lectures and clinics in Tacoma May 3.

Guest speaker, Harry E. Mock of Chicago, his subject being "Traumatic Surgery."

PACIFIC NORTHWEST MEDICAL ASSOCIATION

Spokane, June 25-28.

This postgraduate course consists of lectures on bronchoscopy, pathology, neurology, internal medicine, surgery, physiology, endocrinology, roentgenology and obstetrics. Names of lecturers and other details will appear in subsequent issues.

UNIVERSITY OF WASHINGTON ANNUAL GRADUATE MEDICAL COURSE

Seattle, July 14-18.

Guggenheim Hall, University of Washington, July 14-18.

Lecturers for this course will be as follows:

Maurice G. Pincoffs, University of Maryland. Subject: Medicine.

Max Thorek, American Hospital of Chicago. Subject: Surgery.

John Saunders, University of California. Subject: Surgical Anatomy.

Howard C. Naffziger, University of California. Subject: Neurosurgery.

IDAHO

STATE MEDICAL ASSOCIATION ANNUAL LECTURES

Sun Valley, June 18-21.

This annual meeting comprises a postgraduate course of lectures. Speakers and subjects to be announced later will be from the faculty of Stanford University Medical School.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-SEVENTH ANNUAL MEETING, PORTLAND, SEPT.

MEDICAL LEGISLATION

BILLS WITH MEDICAL IMPLICATIONS INTRODUCED OR LIKELY TO BE INTRODUCED BEFORE PRESENT LEGISLATIVE SESSION

Teachers' Certification Relating to Annual Physical Examination

Changes proposed which will clarify present law, making it in reality a tuberculosis case finding program. Sponsored by the Oregon State Teachers' Association. Medical profession should be in favor of such clarification and simplification.

Compulsory Blood Tests for Pregnant Women

An acceptable form of this bill has not yet been drafted. Present bill makes physician responsible for making test, and, therefore, guilty of violation if he fails to do so. Such a health problem should be solved by educational methods, should not be compulsory, and the penalty should not fall on the physician. "Must" legislation as regards health is essentially wrong. Present bill should be opposed.

Health Insurance Bill

Sponsored by Oregon Commonwealth Federation. Would provide (1) coverage for illness of all workers and their dependents, including all industries and trades, agriculture and domestic help; (2) maternity benefits; (3) medical care, drugs, preventive medicines, hospitalization, ambulance and limited dentistry; (4) fee schedule for payment of physicians' services. Fund would be created by contributions from employers and employees, with workers earning $70 a month paying nothing, and those earning $200 a month paying $3 a month. Every established policy of Oregon State Medical Society would be broken by the passage of this bill.

Bill for Reimbursement of Hospitals

For care of those injured in automobile accidents. Fund created by increase in automobile driver's license fee from the existing $1 to $1.50 for a biennium. Act favorably.

State Industrial Accident Commission

By action of last legislature, an interim committee has brought in recommendations for overhauling the laws governing this commission. In other words, the law is due for a shaking up. Governor Sprague has asked for an "exclusive state system of accident insurance." An administrator is proposed who will be subordinate to the commission. A new safety code would be established, the fund would be strengthened, trial by jury would be abolished. There would be no subcontracting. This is one of the most important bills up for consideration and needs careful thought and watching for amendments. One amendment which will be offered will bring occupational diseases as well as injuries under the law. (Oregon cannot stand that burden at this time.) Physicians should urge that the funds be adequate to cover costs of proposed changes and that provisions be clearly defined to avoid needless correspondence and dispute.

Osteopathic Law

To create a separate board of licensure. Original osteopathic law has been so amended that it is impossible to interpret it and osteopathy defies legal definition in Oregon at this time. The limits of osteopathy are not definable and their Association refused to cooperate with the State Medical Society and Board of Medical Examiners in a proposed survey of osteopathic schools. A suit brought by the Board of Medical Examiners is pending still. This bill should be defeated and the present licensing board kept as it is, so that all persons practicing medicine and surgery shall be under one board.

Venereal Disease Act

Leave this act as it is at present and do not amend it with respect to conditions under which laboratory services and treatment materials are provided by the State Board of Health. The Clinical Pathologists have offered to do laboratory work for charity patients of private physicians without charge.

Board of Medical Examiners

Proposes to hold two examinations yearly at dates selected by the Board. Allows flexibility so that a second examination can be held to accommodate those finishing internships and Basic Science examinations. Act favorably.

ORGANIZATION ACTIVITIES

The Council of the Oregon State Medical Society met in Portland on January 4 in conjunction with the Bureau of Medical Economics. A major item of business was approval of the budget for 1941. Careful use of income will be necessary to keep out of the red and no member of the Council could find a way of juggling figures to make the income larger. As a matter of fact, income is apt to be lower because of loss of dues of those called for military service. As it stands at present the estimated expenses exceed the estimated income by nearly $2,000. Some comments were heard on the necessity of calling for a special assessment later if this difference cannot be made up by mid-year.

Authorization was then given (1) to proceed with incorporation of the society; (2) to establish a system of chartering of the component societies; (3) to draw up regulations which smaller hospitals throughout the state might well follow, in conformity with principle of the A.M.A. and the O.S.M.S.

The coming legislative session was discussed at length and the recommended action on the known bills is given elsewhere in this section.

SOCIETY MEETINGS

MARION-POLK MEDICAL SOCIETY

Marion-Polk Medical Society met January 14. E. E. Osgood of Portland, spoke on "Practical Aspects of Chemotherapy," and the paper was discussed by E. A. Lebold. Dr. Baum discussed some bills pending before the state legislature concerning the practice of medicine. The name of the Society was changed from Polk-Yamhill-Marion Medical Society to Marion-Polk Medical Society. Officers were elected as follows: Willard N. Thompson, Salem, president; Edward A. Lebold, Salem, president-elect; A. F. E. Schierbaum, Mount Angel, vice-president; C. A. Fratzke, Independence, secretary-treasurer.

YAMHILL COUNTY MEDICAL SOCIETY

Yamhill County Medical Society held its regular meeting January 7, at the Tourists Cafe in McMinnville. An open forum was the program.

LANE COUNTY MEDICAL SOCIETY

Lane County Medical Society met January 17, at Seymour's Cafe, Eugene. The program was presented by members of the University of Oregon Student Health Service. Marion Hayes delivered a paper on "Meningococcic Septicemia," and Fred A. Miller spoke on "Influenza."

UMATILLA COUNTY MEDICAL SOCIETY

Umatilla County Medical Society met in Pendleton, January 16. C. C. Sturgis, Professor of Medicine at the University of Michigan, was guest and spoke on "Anemias of Pregnancy."

COOS COUNTY MEDICAL SOCIETY

Coos County Medical Society met January 15, in Marshfield, at the home of George E. Dix. Raymond M. McKeown presented a paper on "Medical Economics," and Ennis Keizer gave a paper on "Varicosities of Legs." During the evening, William Harsfall and John M. Simpkin were honored, and given a silver trophy and a silver platter respectively.

MULTNOMAH COUNTY MEDICAL SOCIETY

The first January meeting of Multnomah County Medical Society was held in Portland January 15. A medical defense program was presented. Frank Mount, Lieutenant Colonel, Medical Reserves, spoke on "Selective Service Examinations;" L. P. Lind, Major, Medical Corps, spoke on "Reserve Officers and the Army Medical Corps;" L. Johnsrud, Lieutenant, Naval Medical Corps Reserves, spoke on "The Naval Medical Corps Reserve;" and Cecil Ross, Major, Medical Reserves, presented a talk on "Reserve Officers and the Air Corps."

TILLAMOOK COUNTY MEDICAL SOCIETY

Tillamook County Medical Society met January 3, at Tillamook Hotel, for election of following officers: C. E. Lemery, Cloverdale, president; E. J. Schuster, Tillamook, vice-president; and Alexander Bradfield, Tillamook, secretary-treasurer.

JACKSON COUNTY MEDICAL SOCIETY

The annual banquet of Jackson County Medical Society was held January 15, at the Hotel Medford. Members, their families and widows of members were invited.

MEDICAL SCHOOL NOTES

POSTGRADUATE SESSION

The University of Oregon Medical School Alumni Association announces the Twenty-ninth Annual Postgraduate Session will be held March 17-21, in conjunction with the Ernst A. Sommer Memorial Lecture Series. All clinics and lectures will be presented at the Medical School, and all physicians of Oregon, Washington and Idaho are invited to attend.

In several respects this is a definite departure from the programs formerly given. The activities formerly covered a period of three days; a much more extensive program this year will extend over five days. In prior years only a part of the program was given at the Medical School; this year all educational activities will be centered at the school under the direction of a postgraduate faculty. Elective courses of intensive training in numerous phases of medical practice of general interest are scheduled. The session is planned as a general one, in which any doctor may select those portions of special interest to him. Another additional attraction will be the affiliation of the Ernst A. Sommer Memorial Lectures, provision for which was made in the will of Dr. Sommer, whose name is well known throughout the Pacific Northwest.

The Ernst A. Sommer Lectures will be given this year by two prominent eastern physicians, Donald Guthrie and William S. Middleton. Dr. Guthrie, formerly with the Mayo Clinic, is head of the Guthrie Clinic in Sayre, Pennsylvania. He is a former president of Pennsylvania Medical Society and New York and New England Railroad Surgeons.

Dr. Middleton, a graduate of the University of Pennsylvania Medical School, is dean of the Medical School at the University of Wisconsin, and also professor of medicine at that institution.

TWO-YEAR INTERNESHIP APPOINTMENTS: The following have been appointed to the two-year rotating interneship at the University of Oregon Medical School Hospitals and Clinics, starting July 1: Robert J. Gould, Leonard D. Jacobson, Frank Lecocq, George C. McCallum, Jock V. Newman, James G. Perkins, Joseph E. Scott, Herman F. Vehrs, Frererick O. Wynia.

N. W. JONES LECTURESHIP: The N. W. Jones Lectures are to be given in the auditorium of the Medical School, April 3 and 4. The school is pleased to announce that Bradley Patten will be the guest speaker. Dr. Patten is Professor and Director of Anatomy at the University of Michigan Medical School.

RESEARCH AT MEDICAL SCHOOL: The recently published Annual Report of the Medical School includes a list of 231 articles in research contributed to the field of medicine by the faculty of the school during the past two years.

SCHOLARSHIP AWARDS: The following students in attendance at the Medical School received scholarship awards for the current year:

State Scholarships: Clay A. Racely and William Burget, first year; Douglas Taylor and Carl Calhoun, third year; Marcus Horenstein, fourth year.

Pohl Memorial Scholarship: Julius Sue, fourth year.

Strowbridge Memorial Scholarship: Ernst E. Banfield and Joseph Nohlgren, second year.

STATE BOARD OF HEALTH

River Pollution Investigation Starts

An interstate investigation of the pollution of Columbia River has been jointly undertaken by the Oregon State Sanitary Authority and the Washington Pollution Commision. A staff of investigators has been in the field for approximately six weeks and laboratory facilities have been provided at the Game Commission Hatchery near Vancouver, Washington. The activities of the field staff will be guided by an Interstate Technical Advisory Committee of six persons, three each appointed by the sponsoring agency in each state.

Prostitution Problem Studied

The Venereal Disease Division reports a number of conferences have recently been held with health officers and police authorities concerning the prostitute problem in Oregon, especially in circumcantonment areas; and a working arrangement has been set up whereby the Army reports its contacts to the State Board of Health whenever any members of the Army personnel contracts a venereal disease. So far there has been no alarming outbreak of the venereal diseases in any of the camps in Oregon or in counties in other adjacent states.

Lab Workers Meet

The Annual Conference of Approved Laboratories was held in Portland, January 10-11. Personnel from the State Board of Health who spoke on their program included Dr. Frederick D. Stricker who extended greetings to the delegates; Gatlin R. Brandon, bacteriologist in the State Hygienic Laboratory who spoke on the "Typing of Typhoid Bacilli by Bacteriophage;" Dr. Erwin C. Drescher, Acting Director of the Division of Venereal Disease Control, whose subject was "The Relationship of Laboratory Findings to the Clinical Diagnosis of Syphilis," and Dr. William, Director of the State Hygienic Laboratory, who spoke on "Kahn's Verification Test, and Approach to the Problem of False Positive Reaction."

Botulism Found in Portland

An outbreak of botulism occurred in Portland causing three deaths; one patient recovered. The State Hygienic Laboratory isolated the organism, Cl. Botulinum, from home-canned beets. Another case was reported in Portland caused by eating home-canned spinach. Unfortunately the jar from which the spinach had been eaten had been cleaned so it was impossible to make the necessary tests. Other jars canned at the same time showed no presence of the organisms.

Hearing Consultant Active in Salem

Dr. Warren H. Gardner, Consultant in Hearing and Vision, tested 2138 children in Salem Schools during the first two weeks in January. He plans to test all children in the city from the first grade through high school. He has found about twenty children who have no usable hearing in one ear. Twenty-eight first grade children need further educational and hearing studies because of reduced hearing. This indicates the great importance of testing children in their first year of school.

New Board Members Appointed

Dr. Thompson Cobreth of The Dalles and Dr. Charles Hunt of Eugene have been appointed to replace Drs. Frank J. Mount and W. J. Weese whose terms expired in January. Dr. Roy A. Payne was reappointed.

STATE MEDICAL EXAMINATIONS

The State Board of Medical Examiners held examinations on January 14-16 in the study hall of University of Oregon Medical School Library. Pediatrics was added to the subjects in which applicants are examined. This is the first time the examination has been held at the medical school and the facilities in the new building were made available through the courtesy of Dr. Richard B. Dillehunt, Dean of the Medical School, and Miss Bertha Hallam, medical school librarian.

Regular meeting of the Board was also held January 16 at the new offices of the Board, 608 Failing Building. There were present Irvin R. Fox of Eugene, President; L. S. Besson of Portland, Secretary and Treasurer; J. L. Ingle of La Grande, Frank E. Fowler of Astoria, and H. L. Blosser of Portland.

The Board announces that at its last several meetings the following licenses have been granted either by reciprocity with sister states or by endorsement of National Board Certificates: Drs. F. A. Brown, Murray Bates, M. J. Dirstine, R. E. Lindgren, Stuart Lancefield, G. D. Massey, B. C. Marsh, Matthew McKirdie, J. L. Miller, C. V. Reichman, A. W. Sullivan, J. R. Seeley, J. N. Stewart and R. M. Gordon, D.O.

Based on authorization granted by Governor Charles A. Sprague, the Board will be represented at the next annual meeting of the Federation of State Medical Societies to be held in Chicago in February of this year. Dr. Carl G. Patterson, veteran member of the Board, was the unanimous choice as delegate from this state.

The Board calls attention to te fact that the annual registration fee of $5 was due on or before December 1, 1940, and notices of delinquency are in the course of preparation. It will be noted that the law provides for automatic revocation of license, if the registration fee is not paid within thirty days from the mailing date of the notice of delinquency. Checks should be made payable to Oregon State Board of Medical Examiners, 608 Failing Building, Portland.

The next meeting date of the Board has been set tentatively for Thursday, April 3.

MEDICAL NOTES

A "Cured Cancer Club" is being formed in Oregon. Membership will be open to all persons whose cure from cancer have been certified by a physician five years after completion of treatment.

Lewis Drummond of Medford, who was injured in an automobile accident January 10, is reported to be improving. He suffered shock, lacerations, and severe bruises.

R. S. Rogers of Junction City was injured in an automobile accident December 31, on the Willamette Highway near Goshen. He was taken to Sacred Heart Hospital, Eugene, where he was found to have a chest injury, lacerations, contusions and severe shock.

Leslie H. Emmett, formerly of Portland, has become associated with the firm of Weese, Palmer and Belknap in Ontario. He received his medical training at Rush and was an intern at the Good Samaritan Hospital in Portland. Since his internship he has been associated with Drs. Berkeley and Anderson of Portland.

Wilmer C. Smith has moved from Portland to Salem, where he will be Chief Medical Consultant for the State Industrial Accident Commission.

Louis P. Gambee of Portland has been appointed member of the state public welfare commission, succeeding R. L. Benson.

WOMAN'S AUXILIARY

AUXILIARY MEETINGS

Multnomah County Auxiliary held its final meeting of the fiscal year January 27, at the home of Mrs. R. Lindsay McArthur. Officers for the coming year were installed. Reports for the past year were read by retiring officers and committee chairmen. Mrs. Edward Allen Pierce had charge of installing the following officers: Mrs. Charles H. Manlove, president; Mrs. Roy Payne, president-elect; Mrs. Elbert E. Cable, 1st vice-president; Mrs. Leo Lucas, 2nd vice-president; Mrs. H. L. Blosser, secretary; Mrs. Thomas Roemer, treasurer and Mrs. Frederick Stricker, auditor.

Tea was served after the meeting. Guests were board members of the Woman's Auxiliary who attended a meeting at the Medical Dental Building Auditorium in the morning of the same day.

In December the Auxiliary raised $266 for the Student Loan Fund at a raffle held December 16 at the home of Mrs. Charles Manlove. Chances were sold by members for twenty-five cents apiece on two cardigan and one child's sweater to be knitted to order by Mrs. Frank Boyden of Astoria.

New loans in the amount of $1000 have been made previously this year to seniors in Oregon Medical School with three students on the waiting list. Two thousand two-hundred dollars in a revolving fund is gradually being repaid. Forty-two seniors and juniors have been aided to date.

Clatsop County Auxiliary began its new year in Astoria, with election of officers October 16: president, Mrs. F. W. Rafferty; president-elect, Mrs. A. G. Allen; 1st vice-president, Mrs. E. E. Berg; 2nd vice-president, Mrs. V. E. Fowler; 3rd vice-president, Mrs. D. C. Prentiss; secretary, Mrs. A. J. Kerbel; treasurer, Mrs. V. E. Fowler. The following standing committees will function: hospitality, public relations, Hygeia, philanthropic and press and publicity Arrangements were made to continue their sewing project for the Doernbecher Hospital for Children, Portland.

Coos and Curry County Auxiliary elected its officers January 8 at a meeting held at the home of Mrs. Melvin Johnson in North Bend. Officers installed were: Mrs. John Keizer, president; Mrs. Melvin Johnson, vice-president; Mrs. A. B. Peacock, secretary and Mrs. Donald Long, treasurer.

Extensive plans were carried out to assist with the Christmas at the County Farm (near Marshfield). Gifts, candy, fruit, cigarettes, games and playing cards were distributed. Layette garments completed during the last year by auxiliary members were taken to the hospital and refreshments were served in the dining room and also to bed-ridden patients.

Mrs. R. Lindsay McArthur,
Chairman, Press and Publicity

EARLY DIAGNOSIS OF CARDIAC SYPHILIS

The importance of the campaign to eradicate syphilis by early and intensive treatment is epitomized by the statement of Berk,[1] in this issue of the *Journal*, that ". . . unsuspected or insufficiently treated syphilis may manifest itself as a cardiac disease. Once clinically recognizable, it frequently baffles all treatment. The patient . . . becomes a hopeless invalid and often dies without warning." The vast amount of clinicopathologic data anent cardiovascular lues has added but little to the early detection of involvement of the heart, its valves and musculature and the ramifications of its arterial system. Electrocardiographic studies have received only passing attention, and those recorded in the literature have dealt mainly with the changes noted in advanced lesions.

Berk's study, over a period of nine years, of 172 cases of cardiovascular syphilis showed that of the 20 in their earliest stages, wherein clinical evidence was highly equivocal and where the electrocardiograms showed abnormal deviations in only 5 per cent, the graduated exercise test altered this figure to 25 per cent. Before the exertion test in 7 cases of aortic insufficiency, 5 were normal electrocardiographically. Following exercise, however, marked pathologic changes were noted. In 2 cases, the ST_1 and ST_2 were negative and the ST_3 positive; in 2 others, the ST_2 and ST_3 were negative; while in the remaining one, the ST_3 alone was negative. All of these showed in addition numerous extra systoles from ectopic foci. It is Berk's opinion that an objective diagnosis of early cardiovascular syphilis is possible by electrocardiographic studies made with the graduated exercise tests. Where 95 per cent of these cases exhibited normal findings with the usual method of examination, transient myocardial anoxemias and pathologic cardiographs were demonstrable in 25 per cent of the cases examined on recordings taken at intervals of from two to ten minutes after effort. A positive test is indicated by a characteristic upward or downward displacement of the RS-T junction and alterations of this segment in two or more leads. Ectopic beats and changes in the initial deflection were also present.

That a normal or borderline electrocardiogram in a case of syphilitic aortitis with beginning ostial stenosis can become positive after the exercise tests is an observation of note. If his studies are confirmed, the routine use of this procedure in the follow-up of luetics under treatment may unearth cardiovascular syphilis at a much earlier stage than is possible at the present time.

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[1] Berk, L. H.: Editorial. N. Y. State J. Med., 41, Feb. 1, 1941.

LEGISLATIVE SESSION

DISCUSSION OF LEGISLATIVE PROCEDURES

In this and the two following issues information will be presented concerning legislative actions on matters of medical interest. Necessarily each of these discussions will have a date line of limitation set by the time of publication. For this issue the date line of news is January 25.

At this writing the state legislature has been in session thirteen days, elected its Speaker of the House, nominated a half a hundred committees in both branches and introduced numerous bills which repeal or enact past and future laws. What seems important is the tenor, the attitude of legislators as they swing into action, the reaction of lawmakers to Governor Langlie's message and the attitude of the Governor himself.

This is a Democratic legislature and indications point to a conservative one. The House, for instance, is running smoothly under the leadership of Speaker Edward J. Reilly of Spokane who had the House in apple-pie order within a few hours after beginning of the session. This has not held true on the Senate side, where there has been an internal struggle among certain leaders and jockeying for positions on prominent committees. In some instances Senate committees have been enlarged to carry the preference of senators for such committees.

Organized medicine and their allies have been fortunate in the selection and nomination of House and Senate Committees on Medicine, Dentistry, Pure Food and Drugs in having a physician in the Senate as chairman and a pharmacist as chairman in the House. So that the physicians in the state may be better acquainted with these committees and their personnel, they are as follows:

Committees on Medicine, Dentistry, Pure Food and Drugs:

SENATE

Dr. Donald Black, Chairman (D), Port Angeles.
Lulu Haddon (D), Bremerton.
George A. Lovejoy (D), Seattle.
Robert T. McDonald (D), Seattle.
Henry J. Copeland (R), Walla Walla.
Harry Wall (R), Chelan.
Paul Thomas (D), Seattle.
Ted F. Schroeder (D), Puyallup.
H. N. (Barney) Jackson (D), Tacoma.

HOUSE

Thos. H. (Tom) Bienz, Chairman (D), Dishman.
Dr. V. G. Backman (D), Pasco.
Dr. U. S. Ford (D), Forks.
Dr. David C. Cowen (D), Spokane.
Fred Miller (R), Oakesdale.
D. W. Jones (D), Wenatchee.
Dr. U. M. Lauman (R), Randle.
Earl Warnica (R), Olympia.
B. F. Reno, Jr. (R), Bellingham.

The Senate Committee has been increased from seven to nine members. The House Committee remains as of last session. Who are these members on the two committees?

Senators Haddon, Lovejoy, McDonald, Copeland and Thomas were members of the Committee in the former session. Black, Wall, Schroeder and Jackson are new. Dr. Black is a physician who has practiced in Port Angeles for many years. He is a member of Clallam County Medical Society and Washington State Medical Association. Mrs. Haddon is the mother of Dr. J. E. Haddon of Bremerton and a member of the Woman's Auxiliary to Washington State Medical Association. Both Senators Lovejoy and McDonald are in the insurance business in Seattle. Senator Harry Wall is a lumber man who defeated John Ferryman in the last election. Senator Wall is well acquainted with nearly all the physicians of Chelan county. Senator Thomas is employed in a county office in Seattle. Senator Schroeder, first elected to the Senate in 1935, is a Puyallup merchant and Senator Barney Jackson, a former member of the House, is serving his first term in the Senate. Senator Jackson, who has never served on the Medicine, Dentistry, Pure Food and Drugs Committees in the House, requested such preference in the Senate and obtained the appointment. He is a locomotive mechanic and is employed in the railroad shops in South Tacoma. So much for the Senate committee.

The members of the House committee are well known to the physicians of the state, all of whom served on the committee last session with the exception of Drs. Backman and Ford who were elected to the legislature in November. All of these men are staunch friends of the things organized medicine stands for and are guardians of public health. A breakdown of the committee shows that it includes three physicians, Bienz a pharmacist, Cowen a dentist, Miller a farmer, Jones and Warnica undertakers and Reno an attorney.

Washington State Medical Association wants it known that they have a representative in the person of Mr. Arthur Anderson, Executive Secretary, on the ground at Olympia contacting the legislature, who will make his headquarters there during the entire session. He can be reached at the Governor hotel, Olympia. All measures introduced during the session will also be reviewed by the Public Relations Committee of the State Association, headed by Dr. Frank Douglass, Medical-Dental Building of Seattle, and members of the Executive Committee.

The State Association, in bulletins and communications to county medical societies, has requested that all communications regarding possible proposed measures sponsored by societies, groups or individuals be first submitted to the Central Office of the association, 218 Cobb Building, Seattle. Legislative Bulletins have been sent to the secretaries of each society and such bulletin service will continue during the entire session.

BASIC SCIENCE AND MEDICAL EXAMINATIONS

The semi-annual basic science examination was held in Seattle January 9-10. Seventy-eight applicants took the examination, of whom seventy-five were medical doctors and three were osteopaths. Failures included nineteen medical men and three osteopaths. There were no chiropractic or drugless applicants.

Examination for medical licensure was held January 13-15. Fourteen applicants received licenses through reciprocity. Twelve interns and others passing the basic science did not appear for medical examination. Thirty applicants were examined for medical license, of whom twenty-nine were successful and one failed.

SOCIETY MEETINGS

CLARK COUNTY MEDICAL SOCIETY

Annual meeting of Clark County Medical Society was held early in December. Karl F. Stefan of Ridgefield was elected president, Frank Boersma vice-president, and John Kahl secretary-treasurer.

COWLITZ COUNTY MEDICAL SOCIETY

Regular meeting of Cowlitz County Medical Society was held at Hotel Monticello, Longview, Wednesday, January 15. John Fitzbiggon of Portland, professor of gastroenterology at University of Oregon Medical School, gave a talk on "The Treatment of Peptic Ulcer."

W. F. Hollenbeck, associate of Dr. Fitzgibbon and clinical instructor of medicine at University of Oregon Medical School, gave a talk on "The Treatment of Chronic Ulcerative Colitis."

It was announced that at the February meeting there would be shown a group of surgical moving picture films prepared by the American Medical Association.

KING COUNTY MEDICAL SOCIETY

The first monthly meeting of King County Medical Society was held in the auditorium of Medical-Dental Building, Seattle, January 6, 8 p.m., President M. Shelby Jared presiding.

The following were elected to membership in the society: E. J. Baer, E. F. Ching, H. V. Hartzell, S. J. Minkove, Paul O'Hollaren and Richard D. Roys.

Reports were read by the chairmen of thirteen committees outlining the activities of each during the past year. Dr. Jared delivered the president's address, reviewing some of the society's activities during the past year.

Retiring President Jared introduced Irvin A. Weichbrodt, president for 1941. He delivered a short address of greeting with an appeal for cooperation and unity during the coming year.

The following officers were elected for the ensuing year: President-elect, William M. O'Shea; secretary-treasurer, Bernard P. Mullen; trustees, M. S. Jared, R. N. Dillon and F. H. Wanamaker; delegates to annual meeting of Washington State Medical Association, David Metheny, F. H. Wanamaker, C. W. Knudson, H. E. Coe, J. F. Ramsay, R. N. Dillon, E. A. Nixon, B. T. King, C. Crookall, E. W. Rawson and alternates P. R. Rollins and Armin Rembe.

PIERCE COUNTY MEDICAL SOCIETY

Regular meeting of Pierce County Medical Society was held in the auditorium of the Medical Arts Building, Tacoma, January 14, with T. K. Bowles presiding.

Scientific program was opened by a paper on "Diseases of the Chest" by Frederick Slyfield of Seattle, who pointed out that it is possible to learn more from the patient's story in his own words than can be learned from all the rest of the examination and laboratory work. He illustrated his subject with lantern slides.

Second paper was a discussion of "The Myelographic Diagnosis of Intramedullary Spinal Cord Tumors" by C. M. Jessico of the Western State Hospital who stated that the differential diagnosis between intramedullary and extramedullary cord tumors is difficult but that a preoperative diagnosis would make the planning of the treatment and the prognosis easier.

SPOKANE COUNTY MEDICAL SOCIETY

At the regular monthly meeting of Spokane County Medical Society, held on January 9, very interesting papers were presented by R. G. Andres, who summarized and stressed "Important Points of Intestinal Obstruction," and George Anderson who discussed the "Hyperventilation Syndrome" and showed interesting colored motion pictures of a case.

WALLA WALLA VALLEY MEDICAL SOCIETY

January meeting of Walla Walla Valley County Medical Society was held at the Marcus Whitman Hotel, Walla Walla. The guest speaker was Karl F. Meyer, who is director of the George Williams Hooper Foundation of the University of California. His subject was "Virus Diseases" and he outlined the amazing progress in knowledge of this group of diseases in recent years. The lecture was illustrated with lantern slides and concluded with a motion picture on psittacosis. About one hundred guests joined with the medical society to hear Dr. Meyer.

YAKIMA COUNTY MEDICAL SOCIETY

January meeting of the Yakima County Medical Society was held at the Commercial Hotel, Yakima, January 13. The meeting was addressed by Henry Dixon, head of the Department of Psychiatry at University of Oregon Medical School. His subject was "The Scientific Approach and Treatment of the Nervous Tension State."

MEDICAL NOTES

COST FOR CARE OF INDIGENT INSANE. A decision on the case of Thurston County, which affects thirty-eight other counties in Washington, was handed down by the Supreme Court December 3. It held that Thurston County must pay $40,417 for care of nonviolent indigent insane in state institutions. This means that the state will collect about $2,000-000 already due from other counties under the same circumstances. Basis of the decision is the ruling which authorized state hospital superintendents to classify indigent patients as violent or nonviolent. The state pays for violent cases but has held that the counties should pay for the nonviolent.

PIERCE COUNTY HOSPITAL GETS AID FOR POLIO. State Social Security Department has granted $13,400 for installation of a physiotherapy department for treatment of infantile paralysis victims at Pierce County Hospital, Tacoma.

Cities Cannot Build Hospital. Attorney General Smith Troy has ruled that third and fourth class cities have no right to build hospitals. This ruling particularly affects the city of Monroe which has been planning a community hospital for several months.

Nurses Home Under Construction. St. Joseph's Hospital, Vancouver, is spending $37,000 on a nurses' home. The three story brick building will house fifty nurses and provide an administration office, library, demonstration and class rooms.

Respirators Presented to Pierce County Hospital. Tacoma district council of the Lumber and Sawmill Workers Union has presented two respirators to Pierce County Hospital. The new machines incorporate modifications suggested by Burton Brown and N. E. Magnussen of Tacoma.

Public Health Appointments. Moroni Jamison has been appointed part-time county physician for Clark County. He succeeds John A. Kahl, who will attend public health school at Johns Hopkins, Irving E. Lloyd has been appointed health officer of Mount Vernon.

Earl Current will serve the athletic commission for eastern Washington. He replaces W. H. Tousey, who resigned because of draft board activity.

Locations. W. W. Collins, who has been associated with J. A. Bickle at Ellensburg, has purchased the office of the late Delta Rowland of Sunnyside.

H. S. Foskett of Spokane has taken over the practice of Wendell H. Sweet of Ritzville who has been called to active duty with the army.

Wedding. Ross D. Wright and Miss Kathryn Bruner were married in the First Presbyterian church, Tacoma, December 24, 1940.

OBITUARIES

Dr. Delta Eulilla Rowland of Sunnyside, died of pneumonia, January 1, aged fifty-seven. She was born in Lanark, Illinois, December 31, 1883, and came to the Yakima valley with her parents in 1908. She received her medical education at University of Illinois College of Medicine, graduating in 1912. After interneship in Worcester, Massachusetts, she opened practice in Yakima and in 1917 moved to Sunnyside. She was long active in civic affairs and was Sunnyside health officer at the time of her death.

Dr. Edgar Arthur Way of Deer Park died December 19, after an illness of several months. He was seventy years of age. He received his medical education at Bellevue Hospital Medical College, New York, graduating in 1896. He had practiced in Deer Park for thirty-one years.

WOMAN'S AUXILIARY

NOTES ON AUXILIARY MEETINGS

The midyear board meeting of the state auxiliary officers will be held February 28 in Seattle at the Olympic Hotel. Mrs. G. E. Hoxsey, state president, will preside and reports of the state officers will be heard. County presidents will also be in attendance at this meeting.

King County Auxiliary had over one hundred members at its December meeting, when they heard Ruth Radford read "A Modern Interpretation of the Coming of the Christ" by John Masefield with music between the scenes. Christmas carols of many countries were sung. Not forgetting the importance of *Hygeia,* a "Bring and Buy" table was arranged for this meeting and the proceeds netted $16 to be used for gift subscriptions of *Hygeia* for rural schools.

Pierce County Auxiliary members were reminded of the value of *Hygeia* at their Christmas luncheon at Bonneville Hotel on December 12. Mrs. Martin Norgore, state *Hygeia* chairman, was present and gave a most inspiring talk on the importance of this magazine to the profession. The auxiliary members felt deeply honored by the presence of the national president-elect, Mrs. R. E. Mossiman of Seattle who gave a most interesting report of the national board meeting she had just attended in Chicago. Completing the program in the prevailing Christmas spirit, the vested girls' choir of Pacific Lutheran College sang Christmas carols before the huge old fashioned fireplace.

Spokane County Auxiliary held a Christmas tea in the home of their president, Mrs. Carroll Smith, in December. For the program, Mrs. Anthony Reynolds told of her experiences last summer with the refugees in Lisbon, her former home. Mrs. Smith led the group in singing Christmas carols.

Yakima County Auxiliary was entertained at the December meeting by Mrs. D. F. Bice. Mrs. J. A. Bline read a Christmas play which was followed by music.

Mrs. George J. Vandenberg,
State Publicity Chairman.

UTILIZE SPEAKERS' BUREAU

The Committee on Postgraduate Medical Education and Hospitals desires that the physicians who have volunteered their services be scheduled by the county medical societies for 1941. The subjects, with names of the speakers, are published in alphabetical order in this and subsequent issues until all have been listed. Requests for speakers should be made as far in advance as possible direct to the Committee on Postgraduate Medical Education and Hospitals, 218 Cobb Building, Seattle.

(Continued)

Durand, Jay; Cobb Bldg., Seattle.
1. Causes and Treatment of Vomiting in Infancy.
2. Ear, Nose and Throat Troubles as Seen by Pediatrician.
3. Infant Feeding.

Engels, C. F.; Medical Arts Bldg., Tacoma.
1. Calculi of Kidney, Ureter and Bladder.
2. Urologic Radiography.
3. The Prostate.

Feagles, Harry; Chehalis. Peritonitis.

Fiorino, John F.; Medical-Dental Bldg., Everett.
Obstetric Subjects as Requested.

Firestone, Charles; Medical-Dental Bldg., Seattle.
1. Plastic Surgery. Aspects from General Practitioner's Viewpoint.
2. Aviation Medicine. A New Specialty, Its Scope and Opportunities It Offers.

Flaherty, F. E.; Stimson Bldg., Seattle.
Surgical Considerations and Management of Carcinoma of Ovary.

Flothow, P. G.; Medical-Dental Bldg., Seattle.
1. Neurosurgery.
2. Head Injuries.
3. Vascular Lesions of Extremities.

Forbes, R. D.; 509 Olive St., Seattle.
Surgery of Stomach, Gallbladder or Bile Ducts, Pancreas, Colon and Appendix.

Francis, Byron F.; Cobb Bldg., Seattle.
1. Diseases of the Chest: Pulmonary Tuberculosis In Various Phases, Nontuberculosis Chest Conditions, Suppurative Cancer, Tumors (chest) In General, Bronchitis.
2. Physiology, Normal and Abnormal of Respiratory Apparatus. Management of Pleural Effusions, etc.

Franz, F. W.; Stimson Bldg., Seattle.
1. Any Urologic Phase or Subject of General Interest.
2. Pathology, General or Special.

Freeman, George W.; Cobb Bldg., Seattle.
1. New and Simpler Treatment for Fractures of Hip Joint.
2. Causes and Treatment of Nonunion of Fractures.
3. Fractures about Elbow Joint.
4. Fractures of Knee Joint.
5. Treatment of Compound Fractures.

Friend, Austin G.; Stimson Bldg., Seattle.
1. Aortitis.
2. The Heart Patient.
3. Hypertension.
4. Coronary Disease.
5. Angina Pectoris.
6. Congestive Heart Failure.
7. Cardiac Arrhythmia.

Fursey, Frank R.; Medical-Dental Bldg., Spokane.
1. Toxemia of Pregnancy.
2. Forceps.
3. Breech Presentation.
4. Induction of Labor.
5. Any Obstetric Subject Requested.

Gahringer, J. E.; Medical Arts Bldg., Wenatchee.
Obstetric Subjects as Requested.

Geehan, John W.; Medical-Dental Bldg., Seattle.
1. Appendicitis.
2. Surgery of Gallbladder.
3. Surgery of the Common Bile Ducts.
4. Surgery of Peptic Ulcer.

Givens, J. H.; 264 East 45th, Seattle.
Surgical Diseases of the Hand.

Goff, Willard F.; Stimson Bldg., Seattle.
1. The Common Cold.
2. Sinus Infections.
3. Prescribing of Hearing Aids.
4. Deafness and Its Treatment.
5. Value of Audiometry.
6. Tinnitus Aurium and Its Treatment.
7. Malignancy of Ear.
8. Malignancy of Maxillary Sinus.

Goss, Harold L.; 1305 4th Ave., Seattle.
Any Subject on the Eye as Desired; Surgery, Medical Aspect, etc.

Green, H. J.; 1102 Cobb Bldg., Seattle.
Injury to Knee, Cartilage Damage.

Grieve, W. E.; Medical-Dental Bldg., Spokane.
1. Fracture; Dislocation of Cervical Vertebrae.
2. Osteomyelitis
3. Infantile Paralysis.

Hagyard, C. E.; Medical-Dental Bldg., Seattle.
1. Diseases of Stomach, Intestines, Rectum, Gallbladder and Pancreas.
2. Psychology of Medicine.
3. Socialized Medicine.

Halvorsen, Clifford; Western State Hospital, Ft. Stelacoom.
1. Mental Diseases.
2. Insulin Shock Therapy.
3. Metrazol Convulsive Therapy.
4. Nitrogen Gas Conculsive Therapy.
5. Combined Chemotherapy.
6. Methods of Sedation; Insulin in Alcoholism.
7. Examination of Psychotic Individuals.
8. Dilantin Used for Epilepsy.
9. Preventive Psychiatry.

Harris, Milo; Medical-Dental Bldg., Spokane.
1. Cancer, particularly of Female Pelvic Organs.
2. Radiologic Treatment of Benign Uterine Conditions.
3. Diagnostic Roentgenology, particularly Gastrointestinal Diseases.

Hathaway, J. C.; Medical-Dental Bldg., Spokane.
Any Dermatologic Subject, particularly Cutaneous Malignancy.

Helwig, Carl M.; Stimson Bldg., Seattle.
Obstetric Subjects as Requested.

Herrmann, S. F.; Medical Arts Bldg., Tacoma.
1. Peritonitis.
2. Acute Abdominal Trauma.
3. Carcinoma of Colon and Rectum.
4. Carcinoma of Pancreas.
5. Complications of Gallbladder Surgery.
6. Surgical Considerations in Duodenol Ulcer.
7. Carcinoma of Breast.

Hoffman, W. F.; 1317 Marion St., Seattle.
1. Cross Eyes.
2. Refraction.
3. Industrial Accidents to Eyes.
4. Ulcers of Cornea.

Horsfall, Frank L.; Medical-Rental Bldg., Seattle.
1. Appendicitis.
2. Diverticulosis with Lantern Slides.
3. Differential Diagnosis of Intraabdominal Lesions.

Hull, Howard L.; Larson Bldg., Yakima.
1. Tuberculosis.
2. Allergy.

Hunt, Wallace D.; County City Bldg., Seattle.
1. Communicable Diseases.
2. Recent Advances in Virus Infections.
3. Maternal and Child Health.
4. Public Health.
5. Epidemiology.

Jensen, C. R.; King County Hospital, Seattle.
1. Differential Diagnosis of Jaundice.
2. Atherosclerosis of the Coronary Arteries.
3. Pathology of Nephritis.
4. Addison's Disease and the Pathologic Physiology of Adrenal Glands.
5. Pathology of Wound Healing.
6. Surgical Pathology.

Jensen, Carl; Medical-Dental Bldg., Seattle.
1. Management of Squint.
2. Management of Eye Problems Seen by the General Physician.
3. Retinal Detachment Surgery.

Joers, L. E.; 5601 Pacific Ave., Tacoma.
Chronic Ulcerative Colitis.

Johnson, Fordyce; Medical Arts Bldg., Tacoma.
1. Importance of Common Cold and Its Complications.
2. Ear Infections.
3. Conservation of Vision.
4. Eye Injuries.
5. Bronchoscopy.
6. Medical Training in United States and Its Present Rating.

Jones, C. B.; Medical-Dental Bldg., Everett.
Obstetric Subjects as Requested.

Jones, Scott S.; Medical Arts Bldg., Tacoma.
1. Postpartum Care.
2. Obstetric Analgesia and Anesthesia.

Jones, W. Ray; 4th & Pike Bldg., Seattle.
1. Genital Sores; Differential Diagnosis and Treatment.
2. Micropathology of G. U. Infections.
3. Treatment of Nongonorrheal Infections of Lower Genitourinary Tract.
4. Social Hygiene; What it is and why Needed.
5. Genitourinary Diseases in History from Civilization's Beginning until Now.
6. Life and Work of the Honey Bee.

Joy, Frederick B.; Stimson Bldg., Seattle.
Congenital Spyhilis and the Significance of Cord Wassermann Reactions.

Kahn, Bernard T.; Rookery Bldg., Spokane.
1. Diseases of Metabolism.
2. Endocrine Diseases.
3. Diseases of and Due to Allergy.
4. Diseases of Chest.

Kellogg, Howard B.; 4th & Pike Bldg., Seattle.
1. Chronic Peptic Ulcer in Children.
2. Treatment of Acute Empyema.

Kindschi, J. D.; Medical-Dental Bldg., Spokane.
1. Induction of Labor.
2. Sterility Studies in Female.

(*To be Continued*)

IDAHO STATE MEDICAL ASSOCIATION

1893

FORTY-NINTH ANNUAL MEETING, SUN VALLEY, JUNE 18-21, 1941

SESSION OF LEGISLATURE

The Idaho legislature is holding its regular session. Information has not been received concerning bills presented which bear on the practice of medicine, though there are some of a controversial nature. In the next month's issue will be presented comments on bills of this nature which have been introduced.

The following physicians were selected to serve at this session: In the Senate are C. A. Robins of St. Maries and T. R. Mason of Kellogg. In the House is J. D. Shinnick of Grangeville; also Dr. McCabe, dentist of St. Maries.

Malcolm Sawyer has recently located for practice at Twin Falls. He is a general surgeon, having received training at Mayo Clinic.

R. S. McKeen has located at Boise. He is a pediatrician, graduate of Northwestern University and served at Mayo Clinic.

A. C. Jones of Boise and C. W. Bond of Pocatello attended a midwinter clinical course in Eye, Ear, Nose and Throat at Los Angeles.

SOCIETY MEETINGS

NORTH IDAHO DISTRICT MEDICAL SOCIETY

December meeting of the North Idaho District Medical Society was held in the Lewis Clark Hotel at Lewiston, December 18. R. C. McDonough and Paul Nutter of Spokane addressed the meeting. Dr. McDonough spoke on "Mycotic Infections" and Dr. Nutter read a paper on "Gastroenterology."

January meeting of the society was held at the Lewis Clark Hotel, January 15. J. E. Carssow of Lewiston was installed as president and E. N. Dunn of Moscow was named vice-president. A representative of the Farm Security Administration requested the society to reopen its discussion of medical care for F. S. A. participants. R. C. McDonough read a paper on "Treatment of Skin Diseases."

POCATELLO MEDICAL SOCIETY

Pocatello Medical Society held a meeting in January at which the following officers were elected for the ensuing year: president, R. P. Howard, Pocatello; vice-president, A. E. Miller, Blackfoot; secretary-treasurer, W. L. Olsen, Pocatello.

SOUTH-SIDE MEDICAL SOCIETY

South Side Medical Society held a meeting January 21 at Twin Falls. Papers were read by T. M. Joyce of Portland on "Appendicitis," and Laurence Selling of Portland on "Rupture of Intervertebral Disc."

The following officers were elected for the ensuing year: president, G. T. Parkinson; vice-president, G. C. Halley; secretary, H. L. Stowe, all of Twin Falls.

SOUTHWESTERN DISTRICT MEDICAL SOCIETY

A meeting of Southwestern Idaho District Medical Society was held January 20 in Boise. Physicians who are members of the Idaho Legislature were guests. They discussed proposed legislation as related to public health and the practice of medicine. T. M. Joyce, Professor of Surgery at University of Oregon Medical School, discussed "Acute Appendicitis." Laurence Selling, Professor of Medicine and Neurology, University of Oregon Medical School, discussed "Herniation of Intervertebral Discs."

MEDICAL NOTES

Lewiston Public Health Meeting. Idaho Public Health Association will meet in Lewiston, October 6-7. Mr. H. C. Clare, Idaho sanitary engineer, has been named general program chairman. E. L. Berry, director of the state public health office, is one of the directors of the association.

St. Luke's Hospital Staff held its annual meeting in Boise January 14. The following officers for the ensuing year were elected: president, Harold W. Stone; vice-president, A. C. Jones; secretary-treasurer, Bruce Budge; members of governing board, O. F. Swindell and William Koelsch.

Robert S. McKean has opened an office for the practice of pediatrics. He recently completed a Fellowship in Pediatrics in the Mayo Clinic.

Health Director Appointed. A. C. Sibilsky was recently appointed head of the North Central Idaho health unit, to replace Hugh Stanton.

WOMAN'S AUXILIARY

COUNTY AUXILIARY ACTIVITIES

Ada County Auxiliary held its December and January meetings at the homes of Mrs. Harmon Tremaine and Mrs. R. R. Jones in Boise. A lively discussion of pending legislation concerning a shift in public welfare agencies was held. Arrangements were made to aid several charitable institutions in Boise and Nampa at Christmas. While their husbands were attending a meeting of the Southwest Medical Society held at the Owyhee Hotel in Boise, Monday evening, January 21, wives attended a no host dinner in the same hotel. Mrs. A. B. Boeck, president of the Ada county division of the Woman's Auxiliary, presided and introduced Mrs. Harmon Tremaine, state president of the auxiliary, who spoke briefly on the work accomplished so far this year by the group.

Mrs. Boeck introduced Dr. James Hollingsworth who spoke on his experiences in Czechoslovakia while he was a student there. Members attended from Boise, Payette, Nampa, Meridian, Mountain Home and St. Maries.

Following the dinner and talk, a brief board meeting was held of state officers who were in attendance. Included were Mrs. Tremaine, Mrs. H. E. Dedman, treasurer; Mrs. I. A. Dix, program chairman; Mrs. R. D. Simonton, social chairman; Mrs. L. F. Lesser, publicity chairman. Plans were discussed for the state meeting to be held in Sun Valley in June.

Canyon County Auxiliary held a series of luncheon meetings last year with women members of the Nampa and Caldwell groups as alternating hostesses. As a special project this year *Hygeia* has been placed in all schools. A particularly interesting series of talks has been given on articles taken from medical books of over a hundred years ago. At each meeting a modern book dealing with some phase of medicine or allied interests has been reviewed. Mrs. V. C. Belknap is president of the group and Mrs. E. D. Hunsaker is secretary.

Mrs. L. F. Lesser,
State Chairman of Publicity.

BOOK REVIEWS

Diagnosis and Treatment of Arthritis and Allied Disorders. By H. M. Margolis, M.D., M.S. (in Med.), F.A.C.P., Chief, Arthritic Service, St. Margaret Memorial Hospital, Pittsburgh, etc. With 140 Illustrations, 551 pp., $7.50. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York, 1941.

This is an up-to-date presentation of chronic arthritis from the viewpoint of the American Rheumatism Association. The author is especially to be congratulated upon his introductory chapter which is an excellent summary of the economic importance and possible manner in which the industrial loss from chronic arthritis may be decreased. Following this are 251 pages devoted to the description, pathologic and clinical, and treatment of the various types of atrophic arthritis. Then come chapters on hypertrophic arthritis, rheumatic fever, miscellaneous arthritidies, including gout and fibrositis. There are discussions of painful shoulder, low-back and sciatic pain.

Especially to be commended is the broad, impartial, unbiased viewpoint of the author. This is well exemplified by his discussion of gold therapy which is complete. Another feature which makes the book unusually valuable is the bibliography appended to each chapter, in which are included main references to that particular branch of the subject. The style of the book is such to make it easily readable.

One regrets that the author has not included more detail of the pathology and physiology of joint disturbances. Likewise, his section on spondylitis is relatively lacking in detail and illustrations. In summary, one may say that this book represents in an unbiased manner the modern conception of rheumatic diseases.

K. K. Sherwood.

Bacillary and Rickettsial Infections, Acute and Chronic. By William H. Holmes, M.D., Professor of Medicine, Northwestern University Medical School, etc. 672 pp., $6.00. The Macmillan Co., New York, 1940.

The author is a practicing physician and teacher of many years' experience. Ht recognizes in modern teaching methods a deficit in that courses are so organized, and books for them are so written, due to the crowded curriculum, as to furnish the student in the shortest possible time with the essential facts of disease required for passing of examinations.

The author believes that each individual disease should be taught in such a manner as to use as a background its history and the story of acquisition of knowledge concerning it. Against this background in this volume are arranged the present facts of pathology, epidemiology, even diagnosis and treatment. The thought is held that with this method the student will better understand and remember the so-called "practical facts" for an examination.

With this plan in mind, the author is preparing two volumes on infectious diseases, of which the present is the first. The result is altogether pleasing, and this is probably due in no small part to the author's skill as a writer as well as teacher. It should not be difficult to work such volumes into ordinary teaching routine. In addition, many practicing physicians may discover that this work is not only a usable reference but also furnishes attractive leisure reading.

C. R. Jensen

Foreign Bodies Left in the Abdomen. The Surgical Problems. The Legal Problems. By Harry Sturgeon, M.D., School of Medicine, Washington University, and David Frederic Crossen, Ll.B., School of Law, Washington University, St. Louis. With 212 Illustrations Including 4 Color Plates. 762 pp., $10. The C. V. Mosby Co., St. Louis, 1940.

This book, written by a doctor and lawyer, reports several hundred surgical cases in which sponges, forceps and other articles have been left in the abdomen, swallowed articles in the abdomen, articles left in extraperitoneal operations and foreign bodies after other operations. In addition are instances of malingering, in which patients have tried to simulate foreign bodies left in the body. The frequency with which this accident occurs is such that it is a normal hazard of all abdominal surgery. The courts have ruled that a foreign body inadvertently left in the abdomen or left too long is in itself evidence of negligence unless it can be proved otherwise. It is interesting to note that in no case has a so-called correct sponge count by either a nurse or assistant of the surgeon been an adequate defense against malpractice. If, however, before the count is reported, the surgeon should make the toilet of the abdomen and determine that no sponges are present and then have this confirmed by a sponge count, he will have a better defense against malpractice, should he be sued for leaving a sponge in the wrong place.

The medical author devotes quite a few pages to the best way to avoid danger of leaving sponges in the abdomen. The most important in his opinion is to let no emergency break the sponge technic that is being used in the particular hospital where one happens to be operating. For example, never cut a sponge in half unless this is the customary practice in that particular hospital. The continuous sponge technic is described that is recommended, although some doctors may object to it as awkward. It is just as easy to use, however, as any other method and will certainly reduce the hazard of foreign bodies being left in the abdomen.

David Metheny

Methods of Treatment. By Logan Clendening, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas, etc., and Edward H. Hashinger, A.B., M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas, etc. With chapters on special subjects by outstanding men in their particular field. Seventh Edition. 138 Illustrations, 997 pp., $10. The C. V. Mosby Co., St. Louis, Mo., 1941.

For those familiar with the former editions of this splendid book, this edition will be found most welcome and gratifying. Those who are not familiar with the book will

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph. Gon. & Ven. Dis., 23, 201 (March) 1939.

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find it helpful. Brought together in one volume is material which is ordinarily widely scattered throughout medical literature, but in this volume it is classified according to its text. Many new sections have been added to this edition. The longest chapter is devoted to drugs, which as every physician knows, next to rest, is the most useful and effective treatment he has at his command. The book in all sincerity presents an endless source of knowledge.

The volume has been divided into two parts, the first concerns itself with the methods used in treatment, not one method being given, but several. The application of described treatments and the results to be expected constitutte the second part of the book. By this plan of arrangement the necessity of repetition has been eliminated and cross references can be furnished almost automatically.

J. M. Bowers.

Menstrual Disorders and Sterility. By Charles Mazer, M.D., F.A.C.S., Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania, and S. Leon Israel, M.D., F.A.C.S., Instructor in Gynecology and Obstetrics, School of Medicine, University of Pennsylvania. With 108 Illustrations. 485 pp., $6.50. The Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York, 1941.

The first few chapters of this text deal with anatomy and physiology of the glands concerned in menstruation. The section following this takes up normal menstruation in all its different phases. The major portion of the book is concerned with pathology of menstruation, with special stress laid on amenorrhea and functional uterine bleeding. The last one-third deals entirely with the problem of sterility from the standpoint of both male and female factors. There are numerous excellent illustrations and descriptions of technical procedures, tubal insufflation and uterosalpingography. While this text will be of interest to the general profession, it will probably be used more often by the specialist, to whom this type of case is referred.

R. P. Smith.

Clinical Electrocardiography. By David Scherf, M.D., and Linn J. Boyd, M.D., F.A.C.P., Associate Clinical Professor of Medicine and Professor of Medicine, The New York Medical College, Flower and Fifth Avenue Hospitals. 362 pp., $6.25. The C. V. Mosby Co., St. Louis, 1940.

Although this volume deals essentially with interpretation of electrocardiograms, there are sufficient clinical and therapeutic data to make it more useful than one ordinarily would anticipate. It is not a book for the beginner and in order to thoroughly appreciate it one must know the fundamentals of electrocardiography and all the pitfalls that one encounters in interpretation of records. The classical and new nomenclature of bundle branch block and axis deviation are clearly described and a complete analysis of both is included. Tracings in some instances are not easily compared, since three systems of timing are used.

One section on abnormal terminal deflections is of special interest and the different types are well illustrated. Many important facts and findings are given in italics. An excellent bibliography is found at the end of each section. The dangers of interpretation of records without knowledge of the patient is emphasized. It is an excellent volume and will find a useful place in the libraries of cardiologists and internists.

A. G. Friend

The Emperor's Itch. The Legend Concerning Napoleon's Affliction with Scabies. By Reuben Friedman, M.D., Assistant Professor of Dermatology and Syphilology, Temple University School of Medicine, Philadelphia. With Ten Illustrations. 82 pp., $1.50. Froben Press, New York, 1940.

The legend has long existed that Napoleon contracted scabies at the siege of Toulon, when he loaded a cannon with a ramrod employed by a scabies soldier who had just been killed. His historical pose with right hand inside his waistcoat was said to have been for the purpose of facilitating necessary scratching. The author gives many interesting incidents in the life of the great soldier, with comments of various medical men concerning the alleged scabies. After thorough investigation of authorities, he believes Napoleon suffered from dermatitis herpetiformis, and offers what he considers adequate justification for this belief. One historically minded will enjoy this volume.

Strange Malady. The Story of Allergy. By Warren T. Vaughan, M.D. 286 pp., $3.00. Doubleday, Doran & Company, Inc., New York, 1941.

So much has been written of late concerning allergy that the term is used by the layman on the street with more or less familiarity. The purpose of this volume is to impart to him correct information. The style is fascinating, written in a more or less humorous vein which is amplified by delightful pen sketches of scenes in the text.

In enumeration of diseases in which allergy plays a role, one may be surprised to find included such incidents as drowning and physical consequences of unrequited affection, which seems to justify the author's characterization of the "crazy pattern of the allergic picture." The book contains five parts with headings: "At the beginning allergy was unknown," "Then came allergy," "Next came treatments," "Allergens" and "Man and his allergy." The book is not written in a didactic style, but introduces tales of human interest which hold the reader's attention while illustrating the principle involved. Under suggestive titles diet is discussed as "Forbidden fruit." "Winds blowing ill" and "What's on the air" introduce pollen allergy. This book is entertaining as well as instructive to both physician and layman.

A Textbook of Clinical Pathology. Edited by Roy R. Kracke, B.S., M.D., Professor of Pathology, Bacteriology and Laboratory Diagnosis, Emory University School of Medicine, Atlanta, Ga., and Francis P. Parker, Associate Professor of Pathology, Bacteriology and Laboratory diagnosis, Emory University School of Medicine, Atlanta, Ga. Second Edition, 780 pp., $6.00. The Williams & Wilkins Company, Baltimore, 1940.

"This book is designed primarily for accurate and comprehensive teaching of this important subject to students of medicine and the interpretation of laboratory findings for the practitioner of medicine." This purpose is thoroughly accomplished in twenty-six chapters and four appendices, the authors of these, fifteen in number, being mentioned with the name of each beneath the title. Usual laboratory procedures are outlined and discussed in detail, covering all phases of blood examinations, immunology, liver function, renal function and other tests. Urine, feces, gastric contents, venereal lesions are effectively dealt with from a laboratory standpoint. The volume contains 223 illustrations with 34 colored plates, all of which serve to elucidate the text. For a volume of its size the subject matter is well presented.

NORTHWEST MEDICINE

THE JOURNAL OF THE STATE MEDICAL ASSOCIATIONS OF OREGON, WASHINGTON, IDAHO

ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION

Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879.
Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 3, 1917, authorized July 31, 1918.

Vol. 40, No. 3 MARCH, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Reprints will be furnished by the printer according to the schedule of prices which accompanies the galley proofs submitted to the author. The order for reprints should accompany the returned galley proofs. The printer holds the type until the first of the following month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

HEALTH INSURANCE LAW

All physicians are concerned about prospective legislation bearing on state medicine or health insurance. Bills referable to these matters have been presented before many of our present legislative sessions. An identical bill has been filed before the sitting Oregon and Washington Legislatures. Under the Washington Section in this issue, page 101, are published some of the main features of Senate Bill No. 247, known as the "Health Insurance Law." This same abstract is applicable to a similar bill presented before the Oregon Legislature.

This is reported to be the same bill, word for word, introduced in the United States Senate on January 23 by Senator Capper, known as Senate Bill No. 489. It is stated that the same bill has been introduced in other state legislatures. It would appear that some interests are seeking to establish a Health Insurance Division in state governments, leading to introduction of general state medicine. It is claimed that this bill in substance is that of the law enacted in British Columbia a few years ago which became inactive, due to refusal of physicians in the Province to participate in it.

This Washington Senate Bill was referred to the Committee on Social Security, including fifteen members, six of whom are believed to favor its passage. A study of this bill by county societies might lead to some action relative to its enactment.

SAMPLE RACKETEERS

In *The Journal of the American Medical Association* of January 25, attention was called to a type of racketeering in samples from pharmaceutical firms and points out the unethical and fraudulent nature of such action. Essentially, the approach is for one L. M. Wilson to request a physician to collect certain samples of pharmaceutical supplies which he will buy at a certain price. All the "go-between" doctor has to do is to write the appropriate pharmaceutical house for the specified items. This racket may seem no immediate concern of ours because it has been developed on the Atlantic seaboard.

But here is one that may be presented to any of us. Mr. Ralph Davis, investigator for the Oregon State Board of Pharmacy, has requested that attention be called to a similar unethical and fraudulent sample racketeering which has been started in Multnomah county and may be extended to other sections. The technic is a more direct approach, less troublesome to the physician, and no written evidence of the transaction exists. One instance was conducted as follows: A man presented a card on which was the name Leon H. Simmons, 945 So. Beacon Street, Los Angeles, representing the Glendale Biological Exchange. He would exchange merchandise for pharmaceutical samples. The merchandise in this case was rubbing alcohol and bandage, and the samples were the usual variety which come through the mail or are left by representatives of the various pharmaceutical firms.

The probable use of such samples is obvious. The merchandise used as the exchange medium may or may not be of standard quality. The rubbing alcohol in this instance was of an inferior grade. There is no guarantee that the packaged bandages are of standard quality or even sterile, for substitution of labels would be easy. There is no such Biological Exchange listed in the 1940 Los Angeles telephone directory and the whole procedure seems utterly fraudulent. Obviously, it is unethical.

Oregon physicians are asked to be on the lookout for this man and, if approached, are requested to notify the Oregon State Board of Pharmacy while he is still in their offices so that he may be apprehended. The Pharmacy Board must have its evidence at first hand, in other words, hot. Physicians are frequently considered available suckers for an attractive swindle. Don't fall for this one.

ROLL OF HONOR

The army which is in process of training, obtained through the selective draft, demands a large supply of physicians to serve both with the army and navy. These medical men must of necessity be recruited from practicing physicians located in all cities of the land. This service, whether continued for one or several years, means separation from practice of one's profession which has resulted from labors extended over a period of years. When the war service is ended, some of these men will return to previous practice which may have been retained through the aid of a suitable substitute or the allegiance of patients secured through the physician's personality. On the other hand, some of these doctors will lose entirely the practice which has been established, and will meet the necessity of beginning anew, either in previous or other fields of service.

Men who have met these requirements and are devoting themselves to the service of their country in time of need demand the admiration and gratitude of their fellow citizens. They truly comprise a roll of honor, and for them should be extended whatever distinction it is possible to establish. It is proposed to carry lists of these men for each state under State Sections. It had been planned to begin the honor roll in this issue of the journal, but names received have been so incomplete and fragmentary that it is considered better to defer publication to the April issue. This will serve as a request that the names of these physicians be sent to the journal office by officials of the state or county organizations in our three states. Information should include present location and the branch of service to which each man has been assigned. It is hoped by next month to have a fairly complete list of these names, and to them will be added from month to month the names of those who enter different branches of service in coming months. It is believed the publication of these names will meet with general satisfaction.

ANOTHER NATIONAL ASSOCIATION

The custom seems well established of organizing a national association for each special line of practice. There are natural advantages in such a procedure, helping to stabilize the specialty and bring the members in close contact with one another. The most recently organized is The American Diabetes Association, Inc., whose purpose is to give an opportunity to join their organization to all people interested in the diabetic problem, whether physicians, scientists, dietitians, nurses, social workers or laymen who may become associate members upon election by the trustees. Among the objects of this association are the dissemination among physicians of information relative to diagnosis and treatment of diabetics, to educate the laity in its early recognition and importance of medical supervision, to encourage adequate treatment of diabetics and the establishment of summer camps for children.

Following the epochal discovery of insulin by Banting and Best, and the marvelous development of methods of treating this disease, this line of practice as a specialty developed rapidly. In reality the diabetes specialist has something possessed by no specialist in any other line. While victims of ordinary acute diseases are expected to recover and sever relations with their physicians, it is not so with the diabetic. The slogan, "once a diabetic, always a diabetic," annexes the patient permanently to his attending physician. It is estimated that there are 600,000 diabetics in the United States, with a reasonable expectation that in a few years they will number a million. What an opportunity this offers to the diabetes specialist to secure a permanent clientele. At the same time, there is the comforting assurance to the patient that with proper and continuous supervision he may lead a life of happiness with a prospect of reasonable longevity.

Naturally, this association will in due time set up a journal of diabetes. Presumably, it should contain reading matter attractive to patients as well as physicians. Suppose a half of this army of diabetics were to subscribe to such a journal at a price within the means of the average patient, what a stupendous revenue might be anticipated which could be used with expanding results for the promotion of health and comfort of this army of diabetics. This is not intended as an appeal to the cupidity of any line of specialties, it being merely a suggestion as to possibilities. There is every reason to expect that this association will accomplish much to solve problems concerning diabetes.

SECTIONAL MEETING OF AMERICAN COLLEGE OF SURGEONS

A sectional meeting of American College of Surgeons, including Oregon, Washington, Idaho, California, Nevada, Wyoming, New Mexico, Arizona, Colorado, Montana and Utah, will be held at Hotel Utah, Salt Lake City, March 27-28. The five approved hospitals of Salt Lake City will provide clinical background for the meeting. The University of Utah School of Medicine will arrange anatomic, pathologic and other demonstrations.

Distinguished surgeons from all parts of the country will address the scientific sessions. At headquarters hotel there will be educational and scientific exhibits showing motion pictures of surgical and hospital procedures. A large public meeting concerning "Conservation of Health" will be held at the Mormon Tabernacle on the evening of the third day.

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ORIGINAL ARTICLES

TYPHOID TYPING AN AID TO THE HEALTH OFFICER*

William Levin, Dr. P. H.
Director State Hygienic Laboratory
PORTLAND, ORE.

The epidemiology of typhoid fever is, of course, fairly well known to all of you. From the time of Budd, who in 1865 first called attention to the infectiousness of this disease and its transmission from case to case, until the present, a vast literature has accumulated on this subject. Many outbreaks and epidemics have been described. Skill, ingenuity and a keen sense of deductive reasoning have characterized the work of the epidemiologist in tracing these outbreaks and epidemics to their probable sources. Contaminated water and milk supplies have always been the easiest to trace since their victims invariably became ill within a given period, and the outbreaks were explosive in their violence. Moreover, the victims were usually limited to those groups or communities which partook of such contaminated water and milk.

In the investigation of the source of infection of the isolated case, however, the epidemiologist has not always been so successful. Frequently the clues pointed to several possible sources of infection, each branching off into a labyrinthian maze of conjecture and leading to that burial ground of the epidemiologist's hopes and endeavors, "source unknown."

The laboratory has been mainly responsible for the success of the epidemiologist in ferreting out the sources of typhoid fever. By its procedures and technics it has been able to demonstrate contamination of food, water or milk supplies, help diagnose the disease in the ill, and of the greatest importance, detect the healthy spreader of the disease, the carrier of the typhoid bacillus. Step by step the bacteriologist has studied the typhoid bacillus, nurtured it on a variety of media, tortured it with many germicides, disrupted its mode of life from smooth to rough, exposed its antigenic relationships, and finally, by feeding it to bacteriophage, erupted a bewildering array of typhoid types. At this moment the solution of the source of the isolated case of typhoid is at hand; a powerful weapon has been forged for the health officer for the control and eradication of typhoid fever.

The typing of typhoid bacilli and its resulant application to epidemiology is the outgrowth of a long and brilliant series of research upon bacterial variation. Time does not permit to go into detail. The work of Baerthlein and Eisenberg in 1912; Hort, 1917; Mellon, 1919; Arkwright, 1921; and DeKruif, 1921, introduced the modern investigation of the R and S (rough and smooth) and intermediate types of bacterial colonies and their correlation with other properties of the organisms. The work of Weil and Felix in 1916 upon the H and O forms of Proteus and its subsequent application to the typhoid-paratyphoid group, led to the present use of H and O agglutinogens in the performance of agglutination tests for typhoid fever.

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*Read before the annual meeting of Oregon Health Officers' Association, Astoria, Ore., May 23, 1940.

In 1934 Felix and Pitt demonstrated that virulent living stock strains of B. typhosus were characterized by a very marked resistance to agglutination by O serum. This virulence and resistance to O agglutination were related to the presence of a new antigen, which they called Vi (virulence) antigen.

Vi antigen has the following (antigenic) properties:[1]

"1. It produces an agglutinin which specifically agglutinates the virulent O-resistant form of the organism.

"2. It produces bactericidal antibody for the virulent form.

"3. It produces specific phagocytosis-promoting qualities for the virulent form.

"4. It produces active immunity against infection with the virulent form and antibodies which will confer passive immunity."

Kaufmann in 1935 introduced the terms V form and W form to denote respectively the form of B. typhosus which develops the Vi antigen and the form which does not do so. Since the form W lacks V antigen it is, therefore, not agglutinated by the Vi agglutinin, but is agglutinated by O agglutinin. It has been shown that the majority of strains recently isolated from cases of typhoid fever and carriers are V forms.

In 1936, Craigie[2] reported the isolation of a bacteriophage which appeared to be specific for the V form of B. typhosus. Subsequently Craigie and his coworkers, Brandon and Yen,[3-8] reported in a series of articles a number of experiments demonstrating the existence of types of B. typhosus. Four distinct serologic types of Vi bacteriophage were encountered, each differing from the others by the size of its particles, thermal death point, neutralization by antiphage serum, and by its lytic activity for the V forms of B. typhosus. Type II phage was found to develop a high selective activity for the type of B. typhosus on which it was propagated. By the use of this selective Type II phage they have divided E. typhi into the following types: A, B_1, B_2, B_3, B_4, C, D_1, D_2, D_3, E_1, E_2, F_1, F_2, G, H, J, L, M.

The technic of typing B. typhosus by means of the bacteriophage is as follows: 1 per cent agar plates (pH 7.8), with smooth surface and properly dried at 37° C, are inoculated with the young V form broth culture to be typed. A standard size (2.75 mm.) loopful of this culture is spread over an area approximately 15 mm. in diameter. A number of such areas are inoculated. After five to ten minutes, when the agar has absorbed the fluid, a standard loopful of the various phages is applied in the center of each inoculated area. When the fluid has dried sufficiently, the plates are incubated for two hours at 37° C, and transferred to the refrigerator or cold room overnight. The plates are then reincubated for four to six hours at 37° C, and are then read. The dilution of the phage used in typing is known as the "critical test dilution," and is "that dilution which under the conditions of the test just produces a sufficient number of plaques to give an area of confluent lysis on the homologus strain of B. typhosus."

In reading the plates the homologus preparation will show an area of confluent lysis where the phage has been applied; other areas show no lysis or at the most a few discrete plaques. Type A cultures are lysed by all phage preparations.

Early in January, 1940, Dr. Alfred S. Lazarus, of the Department of Bacteriology and Public Health of the University of Colorado School of Medicine and Hospitals, asked to be furnished with recently isolated cultures of E. typhi for the determination of their types. He was sent all that were available, each culture being identified at that time by its laboratory serial number only. When his report was received and each culture identified by the name of the patient, it was found that, regardless of the number of typhoid cultures submitted for each paient and their sources, that is, whether from stool or blood culture, all cultures from the same patient were of the same type. This constancy of type, first

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1. Craigie, J. and Brandon, K. F.: Laboratory Identification of V. Form of B. Typhosus, Canad. Pub. Health J. 27:165-170, April, 1936.
2. Craigie, J.: Bacteriophage for V. Form of Salmonella typhi. J. Bact. 31:56, 1936.
3. Craigie, J. and Brandon, K. F.: Bacteriophage Specific for O-resistant V. form of B. Typhosus. J. Path. & Bact. 43:233-248, Sept., 1936.
4. Craigie, J. and Yen, C. H.: Demonstration of Types of B. Typhosus by Means of Preparations of Type II Vi Phage; Principles and Technique. Canad. Pub. Health J. 29:448-463, Sept., 1938; Demonstration of Types of B. Typhosus by Means of Preparation of Type II Vi Phage; Stability and Epidemiological Significance of V Form Types of B. Typhosus. Canad. Pub. Health J. 29:484-496, Oct., 1938.
5. Craigie, J.: Notes on Typing of B. Typhosus, with Special Reference to Types E2 and F2. Canad. Pub. Health J. 30:37, 1939.
6. Yen, C. H.: Bacteriophage Typing of B. Typhosus Isolated in Peiping. Proc. Soc. Exp. Biol. & Med. 41:162-165, May, 1939; Type Stability to Bacteriophage of Variants of B. Typhosus. Proc. Soc. Exp. Biol. & Med. 41:165-167, May, 1939.
7. Brandon, K. F.: Application of Phage Typing to Strains of B. Typhosus Recovered from Typhoid Fever. Canad. Pub. Health J. 31:10-12, Jan., 1940.
8. Craigie, J.: Further Observations of Types of B. Typhosus. Canad. Pub. Health J. 31:18-20, Jan., 1940.

established by Craigie and Yen, and confirmed in this country by Lazarus, is of inestimable value in tracing the sources of typhoid cases, particularly those which, upon first investigation, seemingly have no common point of contact. By the typing method Lazarus was enabled to predict a certain type carrier responsible for a recent typhoid epidemic in Los Angeles; such a carrier was found.

Lazarus[9] summarizes the following possibilities for the typhoid typing method:

> “1. All cases arising from a carrier will show the same type as the carrier, and therefore the same type as each other.
>
> “2. Typing of all known carriers in a given area will permit immediate elimination of some carriers from consideration and investigation of the activities of others when typhoid cases occur in the same district.
>
> “3. In any outbreak, the typing will show the minimum number of sources involved. Typing will often allow detection of two or more concurrent outbreaks.
>
> “4. Typing of all cultures from a given outbreak will determine whether the epidemic is due to a carrier or sewage contamination. If all cases show the same type, a carrier is probably responsible; if a variety of types is encountered in a single outbreak, sewage contamination is probably responsible for the epidemic.
>
> “5. Complete typing studies in a given outbreak will indicate definitely whether all sources of infection have been uncovered.”

In order to determine the value of typhoid typing a study was made of the epidemiologic data available in our files on cases from whom E. typhi had been obtained and typed. It is indeed regrettable that so many of the cases have such meager information concerning the probable sources of infection. The average practitioner is not supposed to be a Sherlock Holmes; he isn’t. The health officer, however, should be endowed with some detective skill or at least imagination. He should investigate every case of typhoid fever and gather such pertinent data as may be of service to the epidemiologist in tracing down its source. Typhoid typing should be the incentive for better and more complete epidemiologic data.

Table I. Number and Kind of Specimens Submitted for Typhoid Typing.

Stool cultures types	43
Blood cultures types	19
Number of persons having one stool culture	13
Number of persons having two stool cultures	6
Number of persons having three stool cultures	1
Number of persons having four stool cultures	1
Number of persons having six stool cultures	1
Number of persons having one blood culture	13
Number of persons having two blood cultures	1
Number of persons having both blood and stool cultures	4

A total of sixty-two cultures, representing forty cases of typhoid fever, were typed. Of these cultures forty-three were isolated from stool specimens, and nineteen from blood cultures. It may be of interest to you to know that all the blood culture isolations were made from the clots of blood specimens submitted for the Widal test (table 1).

It should be noted that one person had six stool cultures typed. These were collected during a period of eight months, all yielding the same type E. typhi.

Table 2 gives the number of cases of typhoid fever and the number of the various types of E. typhi distributed among the twelve counties in which they occurred:

Table 2. Typhoid Type Distribution by Counties.

County	No. of Cases Typhoid Fever	Type of B. typhosus							
		A	B_1	B_2	C	D_1	E_1	F_1	J
Clackamas	1				1				
Clatsop	2				2				
Coos	6	6							
Douglas	1						1		
Josephine	10	3		1	2	1		2	1
Lane	7	3	1			1	2		
Linn	1				1				
Marion	2	1							1
Multnomah	1						1		
Union	5			2			1	2	
Wasco	2						1		1
Yamhill	2							2	
Total	40	13	1	3	6	2	6	6	3

Types A, C, E_1, and F_1 were predominant among the cases studied. Thus far types B_3, B_4, D_2, D_3, E_2, F_2, G, H, L, and M have not been demonstrated in Oregon. Josephine County had the largest number of cases in the group, ten, as well as the greatest variety of types, six of the eighteen types now recognized.

Let us consider each of the forty cases of typhoid fever and determine the relationship of each type to epidemiology.

Clackamas County. P. J. M., age 59, stool culture Oct. 9 and Nov. 24, 1939. Both type C. No epidemiologic data available.

Clatsop County. Mrs. A. J. became ill on Nov. 6, 1939. The first diagnosis of influenza was changed on Nov. 16 to typhoid fever. She died on Nov. 17. No cultures were obtained.

J. J., age 46, brother-in-law of Mrs. A. J., became ill shortly before she died. Diagnosis of typhoid made on Nov. 15. Stool culture Dec. 6, type C.

Mrs. C. S., sister of J. J., and sister-in-law of Mrs. A. J., stool culture Nov. 27, 1939, type C. This woman is a carrier. According to Dr. Berg, County Health Officer: “She denies ever having had typhoid fever, but inasmuch as she is a mental case having been institutionalized at one time, I do not put too much confidence in statements she has made regarding her past history. She has been living with the J’s and doing a good share of the cooking for the past five or six years.”

Coos County. Five of the six cases typed occurred in Aug., 1937. Investigation showed the source to have been contaminated water as the result of a cross connection between the Coquille city supply and the polluted supply of a lumber mill.

Mr. R., blood culture Aug. 23, 1937, type A.

F. R., age 26, blood culture submitted by a Portland physician on Aug. 23, 1937, and another blood culture submitted by a Coquille physician on Aug. 25, both yielded type A.

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[9] Personal Communication.

Miss D. W., 24 years, blood culture Aug. 25, 1937, type A.

Mrs. W. H. W., 47 years, blood culture Aug. 25, 1937, type A.

D. C., age 3, niece of Miss D. W., blood culture Aug. 25, 1937, type A.

It is also of interest, in passing, to note that in spite of the age of the typhoid cultures, nearly two and a half years from the first isolation, Vi antigen could still be demonstrated.

W. C., blood culture Feb. 2, 1940, type A. No epidemiologic data available. The type of B. typhosus might indicate contact with a possible carrier of the 1937 outbreak.

Douglas County. Mrs. R. J., stool culture Jan. 18, 1940, type E_1. This person is a carrier responsible for several cases of typhoid fever.

Josephine County. R. B., age 5, blood culture Dec. 2, 1937, type F_1. A stool culture from R. B., isolated May 1, 1940, nearly two and a half years later, also gave type F_1. His mother, Mrs. W. G. B., and another son, K. B., became ill at about the same time. B. typhosus isolated from the mother's stool on Dec. 14, 1937, also gave type F_1. No cultures were obtained on K. B.

Mrs. R. C., age 36, stool cultures, Aug. 15 and 19, 1939, both type A. No epidemiologic data available.

Mr. G. B., age 52, stool culture Oct. 18, 1939, type A. Dr. Osgood, County Health Officer, stated that no contact has thus far been established between these two cases. Both live in Grants Pass.

Mrs. L. F., age 50, blood culture, Sept. 13, 1939, type C. She died Sept. 21. This patient may have contracted her infection from two other cases whom she visited while they were ill, and for whom she laundered soiled bed linen before a diagnosis of typhoid fever was made. Cultures from these two cases were not available for typing.

C. C., age 60, blood culture Nov. 10, 1939, type C. This patient lived on the same rural route as Mrs. L. F. Dr. Osgood stated these two persons were entirely unknown to each other, although a common source for the two cases was conceivable. The owner of the C. C. residence is known to have had typhoid fever, and his septic tank discharged into an outside ditch from which water was pumped for irrigating lawns. The two typhoid cases with whom Mrs. L. F. had direct contact were known to have played under sprinklers supplied by this water. If the owner of the C. C. residence could be proven to be a type C carrier, the chain of evidence would be complete.

J. R., blood culture Dec. 19, 1939; stool culture, Dec. 20. Both type B_2. Source of his infection is unknown. Dr. Osgood stated that for months preceding his illness this patient was cutting wood in a remote district of the county, at least twenty-five miles from the nearest known case of typhoid.

B. I., child, stool culture March 5, 1940, type A. This case gives no history of contact with the other type A cases of this county, Mrs. R. C., and Mr. G. B. On the other hand, he was known to have been in direct contact with R. B., a case in 1937 and still a carrier on May 1, 1940, and to have eaten at a picnic of food prepared by R. B.'s mother, Mrs. W. G. B. Both R. B. and Mrs. W. G. B., however, had yielded type F_1 cultures.

D. D., age 11, blood culture Aug. 31, 1939, two stool cultures Sept. 1, all three type D_1. This child presumably got her infection from drinking contaminated creek water.

Mrs. R. W., stool culture April 15, 1940, type J. Source of her infection is unknown. According to Dr. Osgood: "She was known to have had relatively close personal contact with at least seven persons from an adjoining area in Jackson County, where typhoid fever has appeared in epidemic form during the past ten years." No typhoid cultures from Jackson County have been available for typing.

Lane County. Mrs. L. F. K., stool cultures Jan. 21 and 30, 1937; both type A. Source of her infection unknown. She was known, however, to have been in contact with a typhoid case or carrier in Roseburg.

Mrs. W. L., stool cultures Oct. 19 and Nov. 8, 1939, Jan. 16 and 25, April 17 and May 11, 1940; all six cultures type A. This patient lived opposite Mrs. W. S., a known typhoid carrier, type A. Dr. Gardner, County Health Officer, stated there was no history of association between these two neighbor women.

Mrs. W. S., stool culture Jan. 23, 1940, type A. This person is a typhoid carrier who presumably has been the source of infection of several people who were known to have eaten at her home. She may also have been the source of infection of a family in Springfield in 1937, an outbreak at that time blamed by certain people on the city water supply and which caused quite a controversy. Tests made of the city water supply at that time indicated the water to be potable.

L. J., stool culture Dec. 24, 1939, type E_1. This patient gave a history of contact with his grandfather, C. N., a carrier. No culture of this carrier was available for typing.

Mrs. H. E., stool cultures Oct. 24, 1939, and March 15 and May 4, 1940, all type E_1. She contracted her infection from her son over a year ago. Her son's culture was not available for typing. Could there have been any contact between her son and carrier C. N.? It is interesting to note that a stool culture submitted from the Lane County Health Department on Oct. 27, 1939, identified only by the initial H., and supposedly from Mrs. H. E., gave a type A typhoid. Since the culture of Mrs. H. E. isolated three days previously and those isolated several months later were all of type E_1, the stool of October 27 could not have been from this patient.

Mrs. P. M., stool cultures Jan. 25 and 31, 1940; both type D_1. This person is a carrier, and the grandmother of a typhoid patient W. W., whose culture was not available for typing.

S. P., stool culture Feb. 1, 1940, type B_1. This person had typhoid fever in 1938 and was discovered to be a carrier during a survey made early this year.

Linn County. D. T., aged 17, blood culture Nov. 20, 1939, type C. No epidemiologic data available.

Marion County. G. A., age 27, stool culture Dec. 4, 1937, type A. Contaminated well water or oysters was considered the possible source of his infection.

M. G., stool culture Feb. 2, 1940, type J. No epidemiologic data available.

Multnomah County. Mr. S., blood culture Oct. 17, 1939, type E. No epidemiologic data available.

Union County. B. S., age 14, stool specimen Aug. 14, 1939, type B_2. This boy contracted his infection on July 16 from his brother, K. S., who became ill on June 29. No typhoid culture from K. S. was available for typing.

Mrs. L. P., age 40, blood culture Aug. 14, 1939, type B_2. This patient took care of B. S. and K. S. before their illness was diagnosed.

S. W. S., age 23, stool culture Oct. 13, 1939, and blood culture Oct. 14, both type F_1. This man was the father of a nine-month-old baby, T. S., who had returned from a visit to Oklahoma in a community where typhoid was present, and who had been ill for six weeks, with diarrhea as a prominent symptom. Two negative stools were obtained on this baby, although the child had been well for several weeks before Dr. Rich, the County Health Officer, first saw him.

Mrs. H. C., age 28, stool cultures Oct. 14 and Nov. 1, 1939, both F_1. This lady was the aunt of baby T. S. who had been in her home during his illness.

Mrs. H. S., age 53, grandmother of baby T. S., had been slightly ill, according to Dr. Rich, about two weeks after the baby was sick, but was never down in bed. While checking the contacts, she was found to have a positive stool, one on Nov. 1 and one on Nov. 8, 1939. Unfortunately, for some reason or another her typhoid cultures were not kept, hence they were unavailable for typing. Mrs. H. S. gave a history of having had typhoid fever twenty years ago. Stools subsequent to Nov. 8 have been negative; more specimens will be examined from time to time. Dr. Rich states: "In our opinion the probable source of those developing the infection was the baby, since the chain of circumstances seemed to fit. Whether or not the grandmother was and is an intermittent carrier or whether she had the active disease is problematical. I am inclined to feel that she had active mild typhoid at the time the rest were ill, inasmuch as her stools became negative after a short interval."

R. S., age 48, stool cultures March 18, April 17, May 6 and 10, 1940, all E_1. This patient gave a history of drinking contaminated well water.

Wasco County. J. B., age 4, blood culture Nov. 10, 1939, type J. This boy contracted his disease while visiting his grandfather, Mr. B., who had typhoid at Vancouver, Wash. Dr. Lazarus had already typed Mr. B.'s culture before he received that of J. B. Mr. B.'s culture was type J.

R. C., age 3, stool culture Sept. 25, 1937, type E_1. This child had just arrived from California when she became ill. Source of her infection was unknown.

Yamhill County. Mr. E. C., blood culture June 15, 1937, type F_1. No epidemiologic data available.

In an analysis of the forty cases under consideration the total lack of epidemiologic data excludes eight from the evaluation of the typing procedure. Twelve cases yielding various types of E. typhi were examples of the isolated case whose source of infection may have been contaminated food, water or contact with a carrier, or who were known carriers themselves. The remaining twenty cases were those whose association with one another or with a common carrier or vehicle of infection was definitely proven. It was among these that type similarity was of the greatest value either in the confirmation of the evidence linking one case with another, or in the establishment of definite proof instead of conjecture in epidemiologic relationships. Certainly type constancy in individuals was most striking; all twelve persons who had two or more specimens examined gave the identical type for the second, third or sixth specimen as for the first.

While the number of cases studied was relatively small, the value of the typing method developed by Craigie and Yen has been demonstrated. More than ever the health officer should analyze and scrutinize all possible sources of infection. Attempts should be made to obtain and submit stool and urine specimens from every reported case of typhoid fever. The value of blood culture in early diagnosis, long known and frequently forgotten, should be reemphasized. Finally it must not be forgotten that the case of today is the carrier of tomorrow. Carriers cause the majority of typhoid outbreaks in Oregon. By the typing method you can place the responsibility for an outbreak of typhoid fever quickly and with certainty.

STATUS OF PARTIAL GASTRECTOMY IN DUODENAL ULCER*

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Certain very definite trends in treatment of duodenal ulcer have been manifested during the past ten years, and it is becoming quite apparent that considerable unanimity of opinion exists today about many matters pertaining to it. There is no longer a great divergence of opinion among those whose interest has been intense and whose experience has been large as to which duodenal ulcers are best treated by medical means and which shall be operated upon. Not all surgeons are as yet in complete accord as to just what type of surgical procedure shall be employed under the varying circumstances, in which the indications for surgical treatment are entirely clear, but crystallization with a convergence of ideas is occurring.

Granting that the etiologic factors in peptic ulcer are not known, and that there is good reason to believe they may be multiple, it is acknowledged by the internist and surgeon alike that gastric acidity and gastric secretion have much to do with recurrence of ulcer, following medical or surgical methods of treatment. In fact, most all methods of medical management which are employed and all surgical procedures which have been designed for the cure of duodenal ulcer are predicated on control of gastric acidity and gastric secretion through either neutralization, dilution or quantitative reduction. It is well known that results of treatment for duodenal ulcer, whether that treatment is medical or surgical, are dependent upon adequate control of gastric acidity and gastric secretion.

INDICATIONS FOR SURGICAL PROCEDURES

The surgeon must necessarily have very definite and clear ideas regarding indications for surgical intervention in cases of duodenal ulcer. By this time the surgeon, experienced in performance of operations for gastroduodenal lesions, has become as thoroughly convinced as the internist that uncomplicated duodenal ulcer is rarely if ever a surgical disease. The complicated ulcer presents problems in which the purposes of operation are most clearly defined. Three complications generally recognized as distinct indications for surgical treatment, and not necessarily in their order of frequency or gravity, are perforation, hemorrhage and cicatricial pyloric stenosis with gastric retention. A fourth complication, of rather infrequent occurrence but now generally recognized as a distinct indication for surgical intervention, is proved or established intractability to or impracticability of medical management as exhibited by repeated recurrences.

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*Read before the annual meeting of Spokane Surgical Society, at Spokane, Wash., April 27, 1940.

The purposes of operation for each of these complications is not necessarily the same. Perforation of a duodenal ulcer is of two types: the acute free perforation and the protective perforation, the latter often resulting in penetration of nearby structures, most frequently the pancreas. In acute free perforation of a duodenal ulcer the surgeon's responsibility is solely that of saving life through hasty closure of the perforation. That recurrence of symptoms frequently occurs following recovery from an acute perforation and its closure, and that a subsequent operation curative in purpose is necessary in many instances, are entirely beside the point.

The purpose of an operation in the hemorrhagic or bleeding ulcer is control of past, present or future bleeding. In the ulcer which has progressed to cicatricial pyloric stenosis with resultant gastric retention, drainage of the stomach comprises the chief objective of operation. The recurrent ulcer, following simple closure of an acute perforation, the penetrating duodenal ulcer and those duodenal ulcers in which neither acute perforation, bleeding nor cicitricial pyloric stenosis has occurred, but which have proved resistant to medical management, comprise a group of cases in which cure of the disease is the primary and all-important purpose of surgical intervention.

SELECTION OF SURGICAL PROCEDURE

Experience through the years has proved that usually the uncomplicated duodenal ulcer responds so well to painstaking medical treatment that surgical intervention is rarely justified. Experience has likewise proved that results following relatively conservative operations in uncomplicated duodenal ulcer are not good, and that the seriousness of the disease in uncomplicated duodenal ulcer is not sufficiently great to justify either the magnitude or risk of a radical partial gastrectomy. To speak otherwise, the disease must be serious and complicated in order for the results of surgical treatment to be good.

An insidious change has occurred during recent years in the employment of certain surgical procedures in duodenal ulcer, not an arbitrary change, but an entirely natural and justifiable change entirely in keeping with the increasing magnitude of the problems of duodenal ulcer which are largely those of the complications. The surgical duodenal ulcer is no longer the benign lesion amenable to relatively benign and conservative surgical procedures that it formerly was. By this it is not to be inferred that the original disease differs materially from that of the past, but rather that relatively benign duodenal ulcer is no longer regarded as a surgical ulcer. Inasmuch as practically all surgical duodenal ulcers today are complicated in one way or another, major problems are encountered whereby the purposes of surgical procedures are usually not adequately served by the relatively benign, conservative operations which through necessity and not from choice have been relegated to an inferior status, and have been superseded in many instances by partial gastrectomy.

From this statement do not infer that many of the conservative operations which have been used in the past have become obsolete and no longer possess merit. There still remains a distinct place at least for posterior gastroenterostomy and lateral gastroduodenostomy. For the purpose of providing adequate drainage of the stomach in those cases of cicatricial pyloric stenosis of chronic duodenal ulcer, properly executed posterior gastroenterostomy remains a procedure with results unsurpassed by any other type of operation. The operation of lateral gastroduodenostomy of Jaboulay as modified by others likewise retains a position of usefulness in certain carefully selected cases of duodenal ulcer. The various types of operations which may be grouped together and designated as pyloroplasty, with or without excision of the ulcer, have surrendered their relatively high status of former years through their own inapplicability to surgical duodenal ulcer and its complications of today.

The operation of posterior gastroenterostomy has lost prestige, and unjustly in my opinion, largely on the grounds of a variably reported incidence of new ulcer at or about the stoma. That such a new ulcer does occur may not be successfully denied, but that gastrojejunal and jejunal ulcers occur frequently, following a properly executed gastroenterostomy in cases where the indications for that operation have been rigidly adhered to, is a statement which is immediately subject to vigorous challenge. The high incidence of gastrojejunal and jejunal ulcer has occurred through the injudicious employment of gastroenterostomy in uncomplicated duodenal ulcer. Faulty execution of gastrojejunal anastomosis under the guise of gastroenterostomy, not only as concerns the position of the stoma in the stomach and in jejunum, but also as concerns the mechanics of gastrointestinal union, has served to defeat the purpose of surgical intervention, namely, drainage of the stomach and reduction of gastric acidity through dilution and neutralization by duodenal and jejunal content.

The former wide field of usefulness of the operation of gastroenterostomy has narrowed considerably during recent years, but this does not reflect upon the merits of the operation as it is employed in the condition for which it was originally devised, namely, that of organic pyloric obstruction. The reflection is upon those who in the past and who still continue to employ the operation of posterior gastroenterostomy indiscriminately. Through its employment the purposes of surgical intervention are usually inadequately served in the complicated, surgical duodenal ulcer of today, except when that complication is cicatricial pyloric stenosis secondary to a chronic duodenal ulcer or due to cicatrization subsequent to simple closure of an acute perforation.

PARTIAL GASTRECTOMY

Even though conservative operations, as they have been employed in the past in the hemorrhagic or recurrently bleeding ulcer, have been successful in a certain number and percentage of cases, the assurance against future bleeding has not been great. Experience by this time substantiates the idea that past, present and future hemorrhage from a duodenal ulcer may be permanently controlled only through excision of the ulcer, and usually, as Balfour and others have stated, this is most advantageously accomplished by performing a partial gastrectomy. Many bleeding duodenal ulcers are situated on the posterior wall of the duodenum and adequate access to this area to facilitate excision of the ulcer-bearing portion of the duodenum is often gained only after transecting the stomach at some level proximal to the pylorus.

The penetrating ulcer of the duodenum, particularly the ulcer of the posterior wall, in which protective perforation has occurred with subsequent penetration of the pancreas, presents technical problems, the satisfactory solution of which in many instances is found only through transection of the stomach with removal of the distal portion thereof and the first part of the duodenum to a level just below the ulcer. Similar problems are not infrequently encountered when recurrence of an ulcer following simple closure of an acute perforation requires subsequent surgical consideration, and the solution to these is likewise at times to be found only through removal of a part of the stomach. It is not my desire to leave the impression that, when a partial gastrectomy is performed for duodenal ulcer, the ulcer-bearing area of the duodenum should always be included in the resection. It may be stated, however, that failure to include the bleeding ulcer within the scope of the resection constitutes a serious compromise of the primary purpose of an operation for this particular complication.

The magnitude of partial gastrectomy for duodenal ulcer as pertains to the amount of stomach which it is advisable to remove is variable and is subject to many factors. The terms partial gastrectomy, subtotal gastrectomy and gastric resection imply removal of a circumferential portion of the stomach without a distinct designation of the amount of stomach that is involved in the resection. Not until qualifying terms are universally adopted to designate the amount of stomach that is removed in the operation of partial gastrectomy, can common ground be established upon which one may engage in analytical processes. I would suggest that removal of the pyloric half of the stomach be designated as hemigastrectomy and that the various other magnitudes of gastric resection be designated in terms of thirds, quarters, fifths, etc.

If there is agreement with me in the statements that have been made regarding the necessity for excision of certain duodenal ulcers and the exclusion from the gastroduodenal tract of such others as the posterior penetrating ulcer, the statement is in order that frequently this can all be accomplished by conservative transduodenal methods or by pylorectomy, with little sacrifice of the stomach itself, thus facilitating restoration of gastroduodenal continuity. To this statement I wholeheartedly subscribe. Even though excision of a duodenal ulcer on the posterior wall of the duodenum may be accomplished by one or the other of these relatively conservative operations, the incidence of recurrent ulcer is sufficiently great to leave me, at least, with a total lack of ability to select the cases in which such conservative operations might afford maximum assurance against a recurrence of the ulcer.

Again, it is not my desire to leave the impression that a field of usefulness for these conservative operations does not exist. There are instances in which for one reason or another the magnitude of a hemigastrectomy and its attendant risk are such that they outweigh the probability of recurrent ulcer following one of the conservative operations referred to previously, and wherein one may find the applicability of one of them to be preferable.

When one is in quest of the surgical procedure which will provide the greatest assurance against recurrence of ulcer, certain physiologic processes must receive due consideration. All surgical procedures for duodenal ulcer provide in theory at least and in fact some, for the control of gastric acidity and gastric secretion through either dilution, neutralization or quantitative reduction. In the conservative operations dilution and neutralization must be relied upon for the control of gastric acidity. Without bringing together the data at this time, it may be said that there is considerable evidence at hand to support the idea that dilution and neutralization of the acid in the gastric secretion is greatly enhanced, if the duodenal content is made available to the gastric content at or immediately below the level of its highest alkalinity, namely, the second and third portions of the duodenum, and also if the duodenal content is made available to the gastric content for admixture through a downstream by-pass instead of through upstream regurgitation. Experience tends to support strongly the idea that, if one wishes to employ a conservative operation whereby the duodenal ulcer may be excised and gastric acidity controlled through dilution and neutralization, prepyloric transection of the stomach with pylorectomy and resection of the ulcer-bearing portion of the duodenum, followed by low end-to-side gastroduodenostomy of Haberer affords maximum assurance against recurrent ulcer insofar as conservative operations are concerned. The applicability of this operation is not universal.

Many factors have contributed to the necessity or advisability of utilizing partial gastrectomy in treatment of surgical duodenal ulcer. In performing partial gastrectomy many duodenal ulcers can be excised and control of gastric acidity is materially enhanced not only through quantitative reduction of gastric secretion, but also through neutralization and dilution of gastric acidity by the alkaline jejunal content. In quantitative reduction of gastric secretion by gastric resection two vital questions arise: (1) how much shall the gastric secretion and gastric acidity be quantitatively reduced? (2) how much of the stomach shall be removed to provide the desired reduction? To my knowledge no one has as yet provided an acceptable and satisfactory answer to either of these questions. They have to do with the problem of recurrent ulcer following gastrectomy. It should be stated that an anastomotic or jejunal ulcer does develop in a small percentage of cases following partial gastrectomy for duodenal ulcer. Heuer's collective review of a large series of cases disclosed that an anastomotic or jejunal ulcer followed partial gastrectomy in 0.6 to 6 per cent of the cases with an average incidence of 1.9 per cent. All manner of resections and various methods of restoring gastrointestinal continuity were included in this review. No analysis of the amount of stomach which was removed in relation to the incidence of recurrent ulcer was possible.

Conflicting experimental work has brought much confusion, but out of it all certain fundamentals have become firmly established. Since Heidenhain's and Langley's discoveries of the secretory nature of gastric cells, the secretory mechanism of the gastric mucosa has been subjected to intensive investigation. While by this time individual contribution to gastric secretion of each of the several types of cells comprising the gastric glands is pretty well understood, the mechanism by which secretions are produced remains mysterious. Bensley has recently stated, in substance, that next to nothing is known about the chemical processes which are incident to secretory activity, but enough is known to justify the presumption that a series of converging chemical processes are concerned in preparation of the specific antecedent secretory materials contained within the cells of the gastric glands.

Three types of glands are present in the stomach of man, and while they are spoken of as fundic, pyloric and cardiac, each group is characterized by certain predominating cellular content and secretory product. Bensley recognized only two types of gastric glands; (1) gastric glands proper which occupy the proximal two-thirds of the stomach and whose fuction in general is to produce the active elements of gastric secretion; and (2) pyloric glands which occupy the distal third of the stomach, and whose function is mainly production of mucus. While in the main five different cells constitute the gastric glands, certain ones are predominant in each of the three divisions of the stomach. Whatever the mechanism may be by which hydrochloric acid is formed, it is agreed that parietal cells are largely concerned and the degree of gastric acidity is dependent upon them. They are present in all gastric glands, but are most numerous in glands of the body and fundus of the stomach. Berger, in 1933, showed that in the normal stomach parietal cells were most numerous, with quite consistent uniformity throughout the entire body of the stomach, and that parietal cells were approximately 75 per cent, 50 per cent and 1 per cent as numerous in glands at the lesser curvature angle, at the cardia, and at the pyloric antrum respectively as in the glands of the body of the stomach.

If one might presume that the preoperative degree of acidity could be reduced proportionately to the amount of parietal cell content of the stomach that is removed by resection, it remains to determine what degree of postoperative acidity is commensurate with satisfactory gastric function and minimum chance of an anastotomic or jejunal ulcer. This is only part of the problem. There are those who, in their enthusiastic acclaim of partial gastrectomy, have desired and attempted to produce anacidity through removal of three-fourths or four-fifths of the stomach. There is little to substantiate the idea that only through production of anacidity may assurance be provided against recurrent ulcer. Furthermore, it is apparent that those who endorse high, extensive resection of the stomach for relief of duodenal ulcer, have lost sight of the diluent and neutralizing effect of the jejunal content upon persisting gastric acidity afforded through gastrojejunal anastomosis.

It is my opinion that postoperative anacidity not only is not necessary to afford the maximum assurance against reccurent ulcer, but it is highly undesirable. There is good reason to believe the postoperative reduction to approximately one-half of the preoperative degree of acidity provides a reasonable degree of assurance that an anastomotic or jejunal ulcer is a remote possibility. In performing partial gastrectomy one should remain mindful of the fact that dilution and neutralization through gastrojejunal anastomosis operate in conjunction with quantitative reduction in control of gastric acidity and gastric secretion. In accordance with this line of reasoning it has been my policy for the most part to confine the magnitude of partial gastrectomy for duodenal ulcer to resection of the pyloric third of the stomach, including the lesser curvature angle and the ulcer-bearing portion of the duodenum, resorting to hemigastrectomy only in those cases in which total preoperative acidity approximates or exceeds 100.

Through a judicious selection of cases of duodenal ulcer, in which it has seemed that by removing a part of the stomach the purposes of operation were best served, I have succeeded in reducing my own mortality rate of gastric resection during the past year to well within 5 per cent. Many factors contribute to the relative safety with which gastric resection may be performed. The procedure from a technical standpoint may be one relatively easy of execution, when the operation is a primary one where all structures are free, or it may be exceedingly difficult when dealing with recurrent duodenal ulcer following a previous closure of an acute perforation or subsequent to any one of the various pyloroplasty operations. A number of details in the postoperative management have contributed much to the reduction of the mortality rate. The immediate postoperative institution of light suction drainage of the stomach and maintained for a minimum period of forty-eight hours, preferably seventy-two hours, has proved of utmost value, and has decreased to a minimum the incidence of postoperative gastrojejunal dysfunction.

In performing partial gastrectomy no single one of the alternative procedures for establishing gastrointestinal continuity is applicable in all cases. Experience has proved that only rarely may one avail himself of a gastroduodenal anastomosis. The Billroth II method of gastrojejunal anastomosis and its various modifications has much to commend it. However, usually the posterior end-to-side restoration of gastrointestinal continuity after the method of Polya is the one of choice.

In bringing this subject before you, it has been my desire to discuss with you the basic principles upon which in my opinion the philosophy of partial gastrectomy in certain cases of duodenal ulcer is founded. It seems to me that the rationale of resection of the pyloric third or half of the stomach in many cases of duodenal ulcer is entirely sound, and that partial gastrectomy has attained a status of such height in the treatment of this surgical disease that its eminence no longer remains obscure.

INFANTS WHO SLEEP WITH THEIR EYES OPEN

An infant or young child who sleeps with his eyes partially open may suffer no harmful effects, *Hygeia, The Health Magazine* declares in answer to an inquiry.

"During the first few days of life," *Hygeia* explains, "about 10 per cent of infants sleep with their eyes open or partly shut. At birth all the muscles and the nerves which regulate the activities of these muscles are well developed. The eye itself, however, is comparatively large in proportion to the muscles which guard it. There may be instances in which these muscles are not fully grown to cover the entire eye. During this early period, the condition is of no significance so long as the cornea (the transparent part of the eyeball with the iris and pupil) is not exposed. Usually the eyes roll upward in order that this sensitive part may remain protected from injury or dryness.

"This condition is at times carried over to later childhood without harm to the eye. If it exists beyond the second year, the child should be examined by a competent oculist to ascertain that there are no defects in the muscles or nerves which regulate the opening and closing of the eye."

HEREDITARY HEMORRHAGIC TELANGIECTASIA

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During the past several years there have been under my observation several family members exhibiting all the characteristics of the clinical entity known as hereditary hemorrhagic telangiectasia. Investigation appears to disclose that this particular family group is larger numerically than any family with this affliction heretofore reported in the American literature. Furthermore, at the rate that procreation is proceeding in this family, every one practicing in the Northwest will have a better than average chance of being called upon for diagnosis and treatment of this disease. For that reason this rather rare condition is being reported with a general review of the facts already established.

REVIEW OF LITERATURE

Various names have been given to the condition of familial telangiectases with recurring epistaxis. Among them are: Osler's disease, Rendu-Osler-Weber's disease, Goldstein's disease, and hereditary hemorrhagic telangiectasia.

The first report in the literature was by Babbington[1] in 1865 in a family in five generations, but he has not received credit for an original description of the disease because of his failure to mention the telangiectasis which is the underlying pathologic basis for the hemorrhagic tendency. Sir William Osler, in 1902[2] and again in 1907 first called attention to this condition as a clinical entity. He noted that the telangiectasis may occur on mucous membrane as well as the skin. Rendu[3] described a case of epistaxis with telangiectases with a definite family history, and referred to this condition as pseudohemophilia. Other clinicians have mistaken cases of this disease with true hemophilia.

Weber[4] in 1907 reported a family that presented recurring epistaxis with telangiectases and reviewed the history of eight families previously recorded. In his conclusions he emphasized that this condition affects and is transmitted equally by both sexes, that it is not associated with any hemophilic tendency, that the angiomata are not congenital but late developmental defects, and tendency to epistaxis is present in early life long before the appearance of the telangiectases.

According to Hurst and Plummer[5], up to January 1932 there were reported in the literature but fifty-seven family trees which showed indisputable evidence of the disease in its true form. Usually not more than two or three cases were observed from each family tree, so that the actual number of patients treated and observed to that time was less than two hundred. Recently many more families have been reported and Goldstein, who has exhaustively studied this condition[6], compiled a remarkable bibliography published in 1934[7]. I am inclined to agree that the relative frequency of the disease would soon be established if every physician seeing cases of recurring epistaxis or multiple telangiectases of the face would inquire into the family history. Still more would this be the case, if rhinologists and dermatologists did the same.

This history indicates that confusion may arise from attachment of so many different investigators' names to the same disease; therefore, it seems to me a step in the proper direction to adopt exclusively the name, hereditary hemorrhagic telangiectasia. This is eminently appropriate because it embodies the three postulates of Larrabee and Littman[8], which must be fulfilled before the diagnosis can be made. These are: (1) there must be a history of heredity, (2) there must be visible telangiectases in numbers and distribution distinctly pathologic, (3) there must be a tendency to bleed from such lesions.

CLINICAL FEATURES

At this time it is well established that this condition is familial and hereditary and the inheritance factor is a dominant one, although atavistic skipping has been reported. Either sex may be affected with a slight preponderance of occurrence in females, and transmission is not sex-linked.

The most frequent and also most troublesome feature of the disease encountered is nasal hemorrhage which may be so profuse as to necessitate transfusion for life-saving purposes. Epistaxis

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1. Babbington, B. G.: Hereditary Epistaxis, Lancet. 2:362, 1865.

2. Osler, W.: Family Form of Recurring Epistaxis Associated with Multiple Telangiectasis of Skin and Mucous Membranes. Bull. Johns Hopkins Hosp. 12:333-337, Nov., 1901; On Telangiectasis Circumscripta Universalis, Bull. Johns Hopkins Hosp. 18:401-403, Oct., 1907.

3. Rendu: Epistaxis Repetees Chez un Sujet Porteur de Petits Angiomes Cutanes et muqueux, Bull. et mem. Soc. med. d. hop. de Paris 13:731, Oct. 23, 1896.

4. Weber, F. P.: Multiple Hereditary Developmental Angiomata (Telangiectasia) of Skin and Mucous Membranes Associated with Recurring Hemorrhages. Lancet. 2:160-162, July 20, 1907.

5. Hurst, A. F. and Plummer, N. S.: Hereditary Hemorrhagic Telangiectasis with Hemorrhagic Tendencies, Guy's Hosp. Rep. 82:81-97, Jan., 1932.

6. Goldstein, H. I.: Goldstein's Heredofamilial Angiomatosis with Recurring Familial Hemorrhages, Arch. Int. Med. 48:836-865, Nov., 1931.

7. Goldstein, H. I.: Heredofamilial Angiomatosis (Telangiectasia) with Recurring Hemorrhages. Int. Clin. 2: 43-56, June, 1934.

8. Larrabee, R. C. and Littman, D.: Hereditary Memorrhagic Telangiectasia. New England J. Med. 207:1177-1182, Dec. 29, 1932.

usually begins in early life, even though the telangiectases may not become evident until the third or fourth decade.

Laboratory procedures reveal no abnormalities except hypochromic anemia which so often results from the severity of recurrent hemorrhages. In many cases the anemia has been marked and death not infrequently has resulted, though many live to old age in a fair degree of health. Bleeding time, coagulation time, clot retraction, blood calcium, platelet count, white blood cell and differential count, and erythrocyte and fragility tests are within normal limits.

PATHOLOGY

The histopathology of lesions in hereditary telangiectasia has been so well described recently by Sterman and Scal[9] as to bear quotation: "It consists essentially of developmental defect in the vessel wall and mesenchymal tissue of the skin and mucous membranes. The venules and capillaries constituting these telangiectases are dilated and thinned out, being lined by a single layer of endothelium interspersed with a single stratum of connective tissue protruding just under the corium. The papillae and usual undulations of the stratum germinativum are obliterated. The muscular and elastic layers of the vessel wall are conspicuously deficient. These angiomata vary in size from a pinhead to a split pea and may be punctiform, nodular or of spired variety. They are found mostly over the nasal septum (Kisselbach's area), lips, cheeks, eyelids, scalp, tongue, particularly dorsum, tip and edges, gums and other parts of the buccal mucous membranes, and to lesser extent over the trunk and extremities. On the finger tips their site of predilection is under the nail bed. Angiomata have also been found in stomach, bladder, kidneys, respiratory organs (larynx, bronchi and vocal cords), lower bowel, brain and liver. They bleed very readily following the slightest trauma, and at times without any provocation. Severe and profuse epistaxis has been known to follow a mild sneezing, coughing or blowing of nose. Occasionally a change in weather conditions has been found to be the cause of sudden nasal hemorrhage."

DIFFERENTIAL DIAGNOSIS

With a careful anamnesis it is usually not difficult to establish the diagnosis. Hemophilia is the disease with which it is often confounded, and actually several of the early reports were thus designated. Normal coagulation time and the occurrence in either sex should make differentiation possible, together with the presence of telangiectases.

From purpura it may be differentiated by the normal bleeding time, normal platelet count, normal clot retraction and negative tourniquet test. In those cases in which visceral telangiectatic lesions result in hematemesis, hemoptysis, melena or hematuria, confusion may arise with other lesions causing visceral bleeding, such as benign tumors, ulcers, etc. Less frequently it has been confounded with some of the blood dyscrasias and subacute bacterial endocarditis. Here, again, the nature of the lesions, history of a familial incidence, negative blood findings and absence of the cardinal symptoms of those diseases will readily exclude them.

PROGNOSIS

Prognosis must be guarded because cure is not to be expected and death from hemorrhage in affected individuals has frequently been recorded. However, old age is often attained, even though there appears to be no decrease of the hemorrhagic tendencies with passage of years and invalidism often results. Intercurrent disease is a usual cause of death, although profound anemia resulting from hemorrhage may be an important contributing factor. Sturgis[10] of the University of Michigan has noted that there appears to be a decreased tendency to bleed when the blood is maintained at normal levels. He states that the reason is not clear, for even when the hemoglobin and red blood cell count are greatly reduced, bleeding and clotting times are normal.

In the family that I have studied there have been no recorded deaths from hemorrhage, but members of the family say that they know it is not good for them to be operated upon. The family tree chart indicates that there may be reason for this fear of surgery as four members of the third generation have died postoperatively and one following childbirth. No explanation for these deaths has been uncovered at this time, therefore, the significance of an increased surgical hazard in this family is problematical.

TREATMENT

Treatment consists principally of an attempt to arrest the bleeding episodes and to maintain blood elements as close to normal levels as possible. The use of drugs and sera, long advocated, is without any rationale, since it has been definitely established that this affection is hereditary maldevelopment of

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[9] Sterman, M. M. and Scal, J. C.: Familial Telangiectasia with Recurring Epistaxis Successfully Treated with Radium; with Review of Literature. New York State J. Med. 37:287-292, Feb. 1, 1937.

[10] Sturgis, C. C.: Hereditary Hemorrhagic Telangiectasia. Medical Papers Dedicated to Dr. Henry A. Christian: 607-613, Feb. 17, 1936.

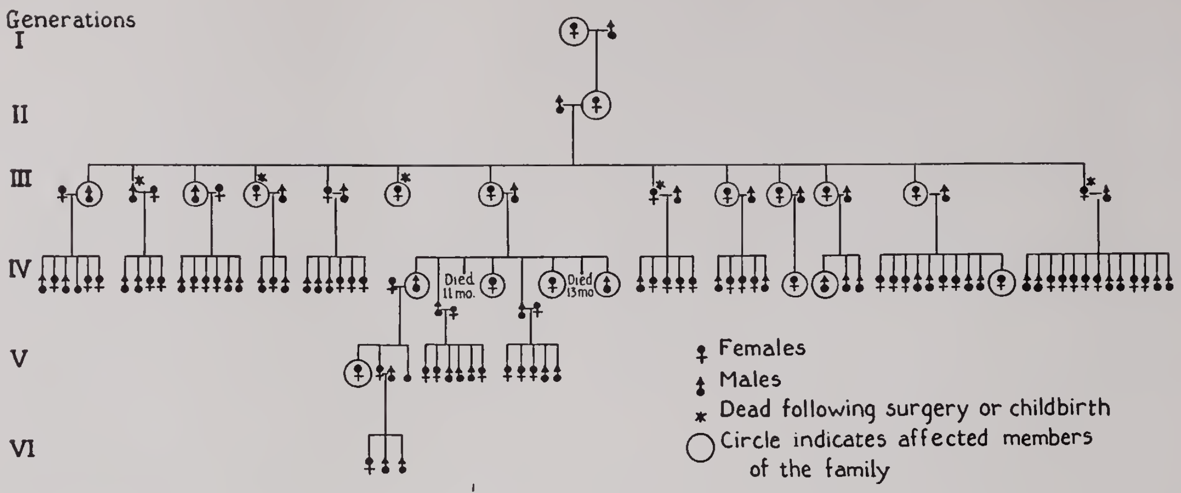
Generations
I
II
III
IV
V
VI
Died 11 mo.
Died 13 mo.
♀ Females
♂ Males
* Dead following surgery or childbirth
○ Circle indicates affected members of the family

Fig. 1. Chart of family tree, indicating occurrence of hereditary hemorrhagic telangiectasia in 19 of 102 members of 6 generations.

the vascular apparatus. When the general condition becomes poor and anemia is marked, blood transfusion is utilized but it is only of temporary value. Troublesome angiomata may be removed in a number of ways. Chemical and electric cauterization may be effective but there is a tendency to recurrence and occasionally the bleeding is aggravated by these methods. Reports about the use of radium in this condition appear more promising and may prove to be the treatment of choice.

CASE HISTORY

Mrs. J. B., a housewife of 55, first was seen by me in April, 1937, and she requested treatment for anemia, offering the information that she always needed medicine after her hemorrhages. Severe nasal hemorrhage began when she was about eight years of age and has continued at frequent intervals since, with increasing intensity and with greater invalidism following the bleeding episodes. Usually the hemorrhages occur without warning and without evident cause, although the patient has found that bending over will often precipitate an attack. During the past several years there also have been spontaneous hemorrhages from finger tips, throat, tongue and ears.

She has been treated by many doctors, who have aided in obtaining cessation of the bleeding by conventional methods and in building up the depleted blood elements. On questioning, the patient stated that she began developing spots on her face, tongue and finger-tips about the age of twenty or thirty and she knew that she belonged to a family of bleeders, although she was never told by her doctors the exact nature of the disorder. She also readily divulged the bleeding tendencies in many other members of her family and the fact that many of them had "spots" on their faces, tongues and finger-tips.

Physical examination revealed an obese elderly female, evidently weak and moderately dyspneic, with marked pallor of the skin and multiple small telangiectases on cheeks and lips. Many raised reddish bleblike spots were visible on the tongue and also on the hard palate and buccal mucous membrane. One petechial-like spot was on the left palpebral conjunctiva and many purplish tender spots on all the finger-tips. The tonsils were large and cryptic. Blood pressure was 175 millimeters of mercury systolic and 90 diastolic. Heart tones were poor in quality and there was a faint apical systolic murmur. Liver, kidneys and spleen were not palpable.

Laboratory examination disclosed a red cell count of 3,720,000 and a hemoglobin of 48 per cent (Dare). Bleeding time was two minutes and fifty seconds and clotting time four minutes. Blood platelets were 223,000 per cubic millimeter. Fragility of erythrocytes was within normal limits and blood clot retraction time was one hour and fifteen minutes.

Diagnosis of hereditary hemorrhagic telangiectasia was made and routine treatment with transfusion was used.

FAMILY TREE

Investigation of six generations of this family revealed that nineteen members were definitely affected and more will probably come to light as more of them come into the age group when telangiectasia usually develops. There is the usual preponderance of occurrence in females and the usual transmission by either sex. The accompanying chart (fig. 1) indicates the number of individuals traced and those definitely known to fulfill the requirements for a diagnosis of hereditary hemorrhagic telangiectasia.

SUMMARY

1. Historic resume is given, important pathologic and clinical features are discussed, and various therapeutic measures briefly reviewed.

2. A case history is reported together with the family tree showing the occurrence of hereditary hemorrhagic telangiectasia in nineteen out of one hundred and two family members, in five generations.

ISOLATED MYOCARDITIS*

REPORT OF CASE

Irvin R. Fox, M.D.
Robin M. Overstreet, M.D.
EUGENE, ORE.

Myocarditis in childhood is usually considered to be a manifestation of rheumatic disease. There are a few recognized exceptions, as diphtheritic myocarditis which is often considered a degenerative or toxic rather than inflammatory process; syphilitic myocarditis; pyogenic myocarditis which occurs as abscesses or granulomas in the heart muscle; and chronic granulomatous myocarditis from other causes. We bring up this case because we find that it is recognized as an entity, although the classification is not clear-cut. The etiology is unknown, pathogenesis is obscure, diagnosis very difficult and treatment of no avail.

There are several references in the literature to myocardial diseases of the type to which we refer. Many writers have reviewed the early German and French literature which discusses the entity to some extent and has given the name of Fiedler's myocarditis to the condition. The subject was reviewed in 1929 by Scott and Saphir[1] and again in 1938 by Hansmann and Schenken[2]. In addition there have been other reports of cases in brief summaries of the literature.

We do not feel it necessary to go into the history of the disease. It is described in the German, French, Polish and English literature to our knowledge. Fishberg[8] and Hansmann and Schenken described the symptom-complex of progressive heart failure found in this disease. In addition there are several other descriptions[4, 5] of acute isolated myocarditis of medicolegal importance because of the suddenness of the onset of symptoms, usually manifesting itself in sudden death. These records show that the myocardium has been sectioned with great thoroughness in search for small inflammatory lesions.

The picture of acute, subacute and chronic myocarditis as presented herein offers no difficulty to the pathologist in finding the lesions. There are also descriptions of chronic granulomatous myocarditis[6], characterized by areas of inflammatory cells, plus giant cells, plus a reparative process. The relationship of these two groups to chronic isolated myocarditis is uncertain. There are other causes of greatly enlarged heart which at times might cause confusion. Among these are rheumatic fever, hypertension, glycogen storage diseases, idiopathic hypertrophy of the heart and pericardial effusion.

There is some disagreement by students of the condition of isolated myocarditis as to etiology. There has been no uniform history or preceding respiratory infection, although this is often described. Other possible etiologic factors suggested have been influenza, carbuncles, gonorrheal urethritis, pneumonia, infected wounds, rheumatism and burns[7]. We feel that respiratory infection played a part.

The pathology described by various writers is that of a cellular infiltration, chiefly lymphocytes with a few polymorphonuclear leucocytes, necrosis of muscle fibers with disappearance of striations and disappearance of nuclei, some fragmentation of muscle fibers and replacement by scar tissue. Other cells reported are eosinophiles, mast cells and plasma cells. Edema, swelling or hypertrophy and degeneration of muscle fibers are also seen. The heart is in most cases greatly enlarged, chiefly by dilatation. Mural thrombi are prone to form, although the endocardium is not the seat of any change. The blood vessels are found to be essentially normal. Most writers refer to the condition as acute myocarditis, although the pathologic picture is also likely to be subacute or chronic, and it has been suggested that it may represent a degenerative rather than inflammatory process.

CASE REFORT

This 3 year old boy of Italian parentage has been carefully followed since birth. His early history is of little significance. The birth weight was seven pounds. He was breast fed for three months; was immunized to pertussis, smallpox and diphtheria, this immunization having been completed more than two years prior to this illness. It may be significant that he was never quite as active as his older sister, a girl of more than average vitality. His appetite was always somewhat inferior to hers.

During the summer of 1939 he complained of some fatigue on exertion. For a few weeks prior to our first seeing the child, the mother noted a slight precordial bulge. He had had an upper respiratory infection two months prior to the onset of these symptoms for which he was seen.

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*Read before the Sixty-sixth Annual Meeting of Oregon State Medical Society, Eugene, Ore., Sept. 4-7, 1940.

[1] Scott, R. W. and Saphir, O.: Acute Isolated Myocarditis. Am. Heart J., 5:129-141, Dec., 1929.

[2] Hansmann, G. H. and Schenken, J. R.: Acute Isolated Myocarditis. Report of Case with Study of Development of Lesion. Am. Heart J., 15:749-756, June, 1938.

[3] Fishberg, A. M.: Heart Failure, 551-552, Lea & Febiger, Philadelphia, 1937.

[4] Magner, D.: Case of Fatal Subacute Myocarditis of Unknown Etiology. Am. J. M. Sc., 198:246-252, Aug., 1939.

[5] Helwig, F. C. and Wilhelmy, E. W.: Sudden and Unexpected Death from Acute Interstitial Myocarditis; Report of 3 Cases. Ann. Int. Med., 13:107-114, July, 1939.

[6] Jonas, A. F., Jr.: Granulomatous Myocarditis. Bull. Johns Hopkins Hosp., 64:45-65, Jan., 1939.

[7] De La Chapelle, C. E. and Graef, A.: Acute Isolated Myocarditis. Arch. Int. Med., 47:942-956, June, 1931.

Other than this his history to the time of admission was inconsequential.

He was seen November 16, 1939, at which time he had an upper respiratory infection. On examination he had a red throat and a temperature of 101°. Following this there were several phone calls from the mother who stated that the child had poor appetite, was listless and satisfied to remain on the davenport a great deal of the time. About December 7 he was brought to the office. The complaints were poor appetite, fatigue and fullness in the left precordial region. He had had a slight cough since the onset of the illness. On examination the only findings were physiologic knock-knees and pronated feet, and the precordial bulge.

On Jan. 17, 1940, he was seen again. The mother stated that his appetite had improved for several days on vitamin B therapy but had again relapsed. It is worthy of note that other than the precordial bulge the complaints were no greater and no different than those of many 3 year old children who have a rather poor appetite, when there has been a recent upper respiratory infection.

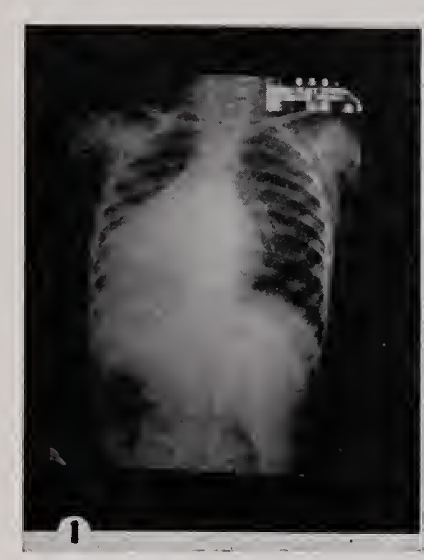

Fig. 1. Dilatation of the heart, shown in anteroposterior view of the chest.

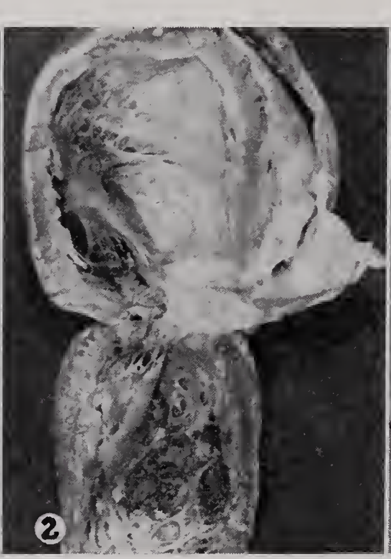

Fig. 2. Postmortem view of heart showing dilatation of all chambers, thinning of myocardium, grayish flecks in myocardium noted near the apex and mural thrombus. No bacteria were found in thrombus.

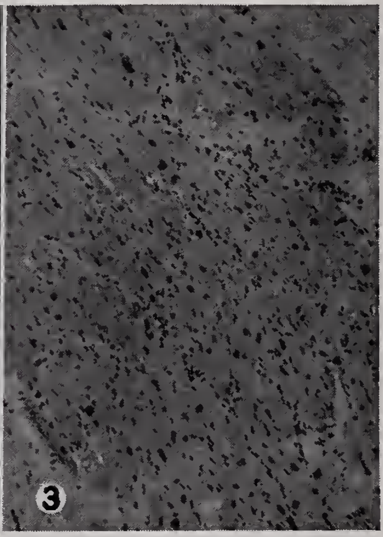

Fig. 3. Photomicrograph of section of myocardium demonstrating infiltration with lymphocytes, loss of striation and replacement of fibrous tissue. The large nuclei are those of myocardial cells.

On February 8 he was seen again in the office because of vomiting. At that time the precordial bulge was much more prominent. He was slightly cyanotic. The heart was greatly enlarged both to the right and left, the cardiac diameter being five and one-half inches, the inside chest diameter eight inches, found in roentgenogram. There were no murmurs. Fluoroscopy showed very little excursion of the cardiac pulsations, being so slight as to suggest pericardial effusion. The electrocardiogram was negative.

The sedimentation rate (Osgood method) was 6 mm. in one hour. The liver was not enlarged and veins were not distended. Blood pressure could not be determined with the stethoscope; however, the systolic pulsations were palpable in the wrist at 80 mm. of mercury. There was no sound over the brachial artery, probably because of a low pulse pressure. Beriberi was considered and he was given thiamin chloride without improvement.

February 10 he was very dyspneic and orthopneic. The pulse was 120 and fairly strong. The liver was enlarged four fingers breadth below the costal margin and was tender. That night he became somewhat stuporous and very restless. A murmur was heard on some examinations but not on others.

On February 12 there was much acetone on the breath, but the alkali reserve was 68. There were signs of compression of the left lower lobe which were interpreted as possibly being early pneumonia, so the child was given sulfapyridine. He vomited before and after it. He was given salicylates with no improvement. All medicine was then stopped except codeine. Fibrillation or showers of extrasystoles appeared at times and cleared up promptly. Temperature was normal or subnormal most of the time, ranging from 97° to 100° per rectum. Pulse ranged from 80 to 132, and respiration from 24 to 52. From February 16 he remained in a semistuporous or delirious condition, and died very quietly on February 19.

Peripheral edema did not appear until the last two days of life. The laboratory findings were of little value. There was a trace of albumin on one occasion and a few white cells and hyaline casts in the urine. The hemoglobin was 85 and 73 on two occasions; red counts 3½ to 4 million; white counts 11,000 to 19,450; differential on two occasions, polys 61, staffs 9, lymphocytes 30; polys 55, staffs 9, lymphocytes 31, monocytes 1; blood culture negative. The mother's Kahn was negative six months prior to patient's birth.

The significant pathologic report by Dr. E. D. Furrer is as follows: "This is the embalmed body of a male child three years of age. There is approximately 200 cc. of clear watery fluid free in the abdominal cavity. The liver extends downward two fingers breadth in the right midclavicular line. Its surfaces are rounded, and on gross section the markings about the central veins are reddish-brown in color. The spleen is contracted and firm in consistency, decreased in size grade II.

There is approximately 100 cc. of clear watery fluid free in both pleural cavities. On gross section both lungs are edematous, and the upper lobe of the left and both lobes of the right contain areas of hemorrhagic infarction. The largest is in the left lung and measures 4 cm. through its greatest diameter.

The space occupied by the heart is increased in size grade II (fig. 1). The surfaces of the heart are covered by petechiae and there is approximately 100 cc. of clear watery fluid free in the pericardial sac. On gross section of the heart the myyocardium is thinned, fibrous and largely covered by pearly connective tissue. The left ventricle is dilated, grade III. There are mural thrombi in the endocardial wall of the septum of the right ventricle and in the endocardium of the anterior wall of the left. The valves of the heart present no distinctive gross vegetations (fig. 2).

Microscopic sections through the heart present a variable picture. There are large areas of dense fibrosis, in which there is no vestige of myocardial fibers. Other areas reveal scattered and small collections of lymphocytes with evidence of destruction of the myocardium. In these areas many of the nuclei arelarge and swollen (fig. 3). The myocardial fibrils are swollen and have lost their striations. Van Gieson stains reveal the connective tissue in various stages of maturity.

Anatomic diagnosis: (1) chronic myocarditis with mural thrombosis in the right and left ventricle; (2) cardiac dilatation; (3) pericardial effusion; (4) bilateral pulmonary infarction; (5) bilateral pulmonary edema and hydrathorax; (6) chronic passive congestion of the liver; (7) hydroperitoneum.

Aside from the heart and lungs there was evidence of passive congestion. As this was clinically a typical picture of circulatory failure, the child was considered to have an active rheumatic fever during his illness because of the progressive nature of the illness and the preceding respiratory infection. However, the respiratory infection was the only clear-cut etiologic factor. There were no joint symptoms, manifestations of chorea, prolonged fever, consistent signs of valvular injury, and the sedimentation rate was normal.

This is frequently spoken of by other writers who comment on the difficulty in arriving at an antemortem diagnosis. We did know that we were dealing with a definite cardiac decompensation with circulatory failure, which is not a common condition in early childhood. Therefore, we could not definitely arrive at a correct diagnosis.

130 E. Broadway.

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8. Kaufmann, E.: Translated by Reinnam, S.P. Pathology for Students and Practitioners. Blakiston, Philadelphia, 1929.
9. Smith, F. M. and Stephens, R. L.: Acute, Subacute and Chronic Interstitial Myocarditis; Report of 6 cases. Assoc. Am. Phys., 53:121-128, 1938.

BLOWFLIES MAY CARRY ORGANISMS WHICH ARE DANGEROUS TO MAN

While there are no true poisons emitted by blowflies or contained in their bodies, such flies may carry organisms to human beings which may cause digestive disturbances or the onset of diseases such as dysentery or typhoid, *The Journal of the American Medical Association* for March 1 says in answer to inquiries about the possible ill effects from swallowing flies.

"Blowflies breed in decaying animal matter and feed on various types of organic debris." *The Journal* explains. "They are, therefore, more or less laden with germs of various kinds.

"There are instances in which blowflies have been swallowed without producing any ill effects. P. F. Fattig, of Emory University, reports having twenty-five different people drink carbonated water in which from one to several green bottle flies had been soaked for several days. No ill effects were observed by any of these persons."

TWENTY-ONE DAY FEVER CURVE

Charles H. Sprague, M.D.
BOISE, IDA.

There is an old clinical axiom, the origin of which I do not know, with which I have been familiar since my student days: "A cold is a self-limited disease of twenty-one days; with excellent medical care it can sometimes be reduced to three weeks!" Though I have searched the literature and textbooks many times, I have been unable to find any description of or reference to a fever curve in connection therewith.

There is a typical curve which starts from the base-line of the normal, hyper- or hypopyretic patient with an elevation of a degree or a fraction of a degree daily, usually with a corresponding tachycardia, continuing until the tenth to fourteenth day; then a reversal and gradual decline, reaching its base-line again on the twenty-first day. The onset of this curve frequently synchronizes with the onset of cold, flu, bronchitis, malaise and hemorrhage.

At Broadlawns, from 1924 to 1937, very accurate graphic charts were kept. Each of these, in addition to other clinical information, records the temperature and pulse three times daily (morning, afternoon and evening) over a period of one month. For ten hundred and fifty individual patients observed and recorded during this time, a total of approximately six thousand charts accumulated and are the basis of this report.

Of the ten hundred and fifty patients, two hundred and sixty-seven were unsuitable for consideration as their periods of observation were too short or their temperature was of the septic or continuous type. Of the remaining seven hundred and eighty-three patients, practically all of them show this twenty-one day fever cure sometime during their residence. A majority of all fevers recorded on the foregoing charts are of this type. Periods of recurrence vary from a month to over a year. Approximately twenty per cent of all charts show this definite twenty-one day duration.

This curve can be observed only where patients are institutionalized for long periods of time and where temperatures are taken several times daily, regardless of the condition of the patient. In private practice it is almost impossible to uncover this curve, but it aids materially in handling many infections to know what a surprising number of patients will return to normal on the twenty-first day.

PALLIATIVE TREATMENT OF ACUTE UNDIAGNOSED SKIN DISEASES*

S. E. Light, M.D.
TACOMA, WASH.

Diagnosis of acute skin conditions is very difficult to most practitioners, and expert consultation is not always available. It is encouraging, therefore, to know that in many of the early acute conditions, the dermatologist may also find it difficult to make a diagnosis, and it is still more encouraging to know that often an exact diagnosis is unnecessary. By this I mean that the basic principles of treatment are the same for many acute conditions, regardless of diagnosis or etiology. After a few days many of these skin conditions will subside without further care. Those conditions which do not subside will develop typical diagnostic characteristics, or consultation with a dermatologist can be arranged.

The patient comes seeking relief from itching or burning. Although this condition is not a serious matter to the physician, to the patient it is a moment of extreme emergency. Unrelenting itching can be intolerable. If the physician considers it lightly and no relief is given, the patient will seek relief elsewhere. On the other hand, he will be satisfied in most cases, even without an exact diagnosis, providing his symptoms are alleviated.

With this in mind, we will briefly consider the basic principles of early treatment of these undiagnosed skin conditions. I am using the term "acute" to include not only recent sudden severe skin conditions, but also acute exacerbations or recurrences of previous conditions, more specifically any acutely irritated skin accompanied by itching or burning, whether edematous, erythematous, weeping, serous, purulent, urticarial or papular.

First, we will outline the various palliative measures which may be employed. It is unnecessary to say that where a definite diagnosis is possible, treatment will be more specific.

GENERAL MEASURES

Diet. Although there is much controversy over the value of various diets in skin conditions, it is quite generally accepted that some foods should routinely be eliminated, especially if the condition is undiagnosed. Avoid rich foods such as nuts, cheese, cocoa and chocolate; cooked grease as found in fried foods, gravies and pastries; strong seasonings such as mustard, catsup, peppers and highly seasoned dishes such as chili, cured meats, etc.; stimulants in the form of alcohol, tea, coffee and coca-cola. Food idiosyncrasies should be kept in mind and in urticarial types of eruptions it is wise to stop all coarse and raw foods.

Elimination. Water and other fluids should be used freely; in urticarial conditions or suspected food idiosyncracies, an initial saline purge may be beneficial; in other conditions, cascara, milk of magnesia, mineral oil, etc., but no phenolphthalein.

Environment. The patient, insofar as possible, should be kept free from all skin irritants and contacts with chemicals, plants, paints, dusts, animals, etc.

Clothing and Bedding. No wool or fuzzy materials should be permitted. Clothing and bedding should be cool, scanty, linen or cotton.

Internal Medications of all kinds should be stopped, especially those drugs just recently started. Ephedrine, phenobarbital, amytal and bromides may be used in most cases. Opiates are contraindicated. Strontium bromide intravenously may give relief. Calcium is indicated.

LOCAL TREATMENT OF UNBROKEN SKIN

There are many procedures which may be employed on the unbroken skin. In this group we include itching and burning skin, where there is no visible eruption, or the eruption is erythematous, papular or urticarial.

Medicated Baths. Hydrochloric acid (15 drops dilute HCl. to each gallon), vinegar (sponge bath of water and vinegar equal parts), tar (three ounces of liquor carbonis detergens to a tub), liver of sulfur (egg to orange size piece to tub), epsom salts, baking soda, table salt.

Emollient Baths, using bran, oatmeal, or starch. Soap may be used on unbroken skin surfaces.

Lotions. Calamine lotions containing antipruritics such as ¼ to ½ per cent menthol, 1 to 2 per cent phenol, 1 to 2 per cent camphor, 5 to 10 per cent liquor carbonis detergens, alcoholic lotions and witch hazel. Calamine liniment.

Powders. Zinc oxide, starch, talc, zinc stereate, bismuth, etc. May add antipruritics.

Oils and Ointments. Simple oils and ointments containing antipruritics. Do not use reducing agents.

BROKEN SKIN, SEROUS NONPURULENT WEEPING

Possible procedures for this type of skin are limited. Only the most soothing local remedies may be used. The primary purpose of treatment is to allay inflammation and change the raw edematous weeping surface to a dry smooth surface.

Baths. Emollient only; no medicated baths and no soap.

Lotions. Simple calamine without antipruritics; no alcohol, witch hazel or oil.

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*Read before the Fifty-first Annual Meeting of Washington State Medical Association, Tacoma, Wash., Aug 25-28, 1940.

Powders. Simple, nonmedicated; do not use powders on hairy surfaces over a long period.

Wet Dressings. These are very effective in this type of eruption. They should be cool and not hot. Milk, saline (slightly hypertonic), boric acid, epsom salts, Burow's solution (diluted 1 to 15 or 20), sugar of lead (diluted 1 to 15 or 20), silver nitrate (¼ per cent).

Pastes. Lassar's paste (plain, no salicylic acid).

Oils. Use oil for cleansing (olive oil, salad oils, mineral oil, etc.). No soaps.

Ointments, Soaps and Antipruritic Drugs are contraindicated on acute, raw surfaces.

BROKEN SKIN WITH PURULENT WEEPING

These conditions are infectious. It is, therefore, of paramount importance that aseptic dressings be employed and that clothing and bedding be as nearly aseptic as possible. Look out for bromides and iodides. This type of eruption is sometimes due to them.

Baths. Potassium permanganate (5 to 15 grains to the tub of water). Soap and water.

Lotions (antiseptic). Bichloride of mercury (1 to 5 or 10,000), alcohol, 2 to 4 per cent, sulphur or ichthyol, 2 to 6 per cent resorcin, and ¼ to 10 per cent silver nitrate.

Compresses and Poultices. Use them hot in the presence of infection. Potassium permanganate or mercury bichloride (1 to 1,000 or 5,000), boric acid, epsom salts, silver nitrate.

Ointments. 3 to 10 per cent ammoniated mercury, sulphur and ichthyol.

Ultraviolet. Suberythema doses.

Dermatologists agree that it is better to know a few drugs or therapeutic agents well, rather than a smattering of many. The following five agents have been found most useful for early acute skin conditions. They are mild and soothing and idiosyncrasy to them is very rare.

1. *Starch Baths.* One pound package of starch; crush, add water and heat or mix with boiling water until clear (hydrolyzed) as for starching clothes. Add to an ordinary bath tub of lukewarm (not hot) water. Use no soap. Pat dry, or better yet, air dry. Do not rub. This is soothing and quieting and may be used repeatedly provided the skin is not too dry.

2. *Boric Solution.* One tablespoon of boric acid crystals to each pint of water (saturated solution). Soak hands and feet in this solution for one hour or more twice a day, or use as continuous wet compresses, changing every five to ten minutes. Use cool or at room temperature for everything except pus infections or whenever there is an associated lymphangitis; use hot for these. This solution is soothing to both acid and alkaline skin and controls weeping and edema by osmotic action.

3. *Calamine Lotion.*

Rx. Calamine	8	for color and drying
Zinc oxide	12	for body and drying
Glycerine	4	for adhesiveness
Aqua Calcis q. s. ad	120	Vehicle and emollient

Of universal use for its soothing and antipruritic and drying properties.

4. *Calamine Liniment.*

Rx. Calamine	8
Zinc oxide	12
Glycerine	16
Aqua calcis, olive oil, equal parts to make	120

This is calamine lotion altered by the addition of olive oil and more glycerine. The effect is the same except that it is less drying.

When skin is unbroken. Antipruritic drugs may be added to these lotions: 1 or 2 per cent phenol, ¼ to ½ per cent menthol, 5 to 10 per cent liquor carbonis detergens, 1 to 2 per cent camphor.

5. *Lassar's Paste (plain).*

	Parts:
Rx. Zinc oxide	1
Starch powder	1
Petrolatum	2

For use on raw, semiweeping or mildly weeping surfaces. Two to five per cent crude coal tar is often added for eczematoid conditions. Olive oil may be used to remove it where soap is contraindicated.

The above five agents, together with ephedrine and phenobarbital should control or cure the vast majority of acute skin conditions. Stronger remedies should not ordinarily be used on acute undiagnosed conditions without consultation.

CONCLUSIONS

Let me cite a few axioms which, if kept in mind, may save some embarrassments:

1. Dry a weeping surface; do not grease it.
2. Baths, powders, lotions and wet compresses, but not ointments, for weeping surfaces.
3. Antipruritic drugs on the unbroken skin, none on the broken surfaces.
4. Avoid opium and its derivatives in all acute skin conditions.
5. Weeping surfaces; avoid soap, use oils, emollient baths or compresses to cleanse.
6. Use mild applications; they are usually quicker in the long run.
7. Eruption of the hands, examine the feet.
8. Listen to the patient. If he says an application irritates, stop it.
9. Again, dry a weeping surface; do not grease it.

FACTORS TO BE CONSIDERED IN MANAGEMENT OF ECZEMA*

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I wish to bring to your attention various factors that I think are important in considering the proper management of eczema. I will not touch on treatment as such, but will leave that to the versatility and cunning of the managing physician. It was once said that practice of medicine was mostly an art with a little science thrown in. I do not know where this would more aptly apply than to the "cure" or alleviation of a case of eczema.

Eczema, dermatitis if you will, is from the Greek meaning "to boil out," and is characterized by erythema, infiltration, vesiculation, fissuring, crusting, scaling, lichenification, hyperpigmentation and, last but not least, itching. Acute eczema may be, chronic eczema seldom is, of one kind, but is usually caused by an interplay of several. In order to solve the problem of what is causing an eczematous skin it is necessary to know what variables may be present. The following is a list and short discussion of those more commonly found.

Diathetic-atopic eczema, neurodermatitis of the Germans, is usually due to an hereditary predisposition associated with the eczema, asthma, hay fever complex, where an allergic role is played by one substance or a variety and perhaps evershifting group of substances that have a low allergenic potency for most persons and a high specifiicity for a few. About forty per cent of persons having this type of eczema will have no familial history of atopy, while thirty per cent with a diathetic background on both parental sides will escape with no evidence of it in their makeup. Allergens may make themselves known through contact, ingestion, inhalation, parenteral introduction or occasionally through certain normal or abnormal processes of metabolism. General indicator mechanisms, such as a history of instinctive or acquired dislikes for certain foods, gastrointestinal upsets, headache and grippelike reactions, vasomotor responses of skin and mucous membrane with an urticarial phase, arthritoid symptoms, focal flares and blood findings of leukopenia or eosinophilia are important aids in diagnosis. Then follows illimination, incrimination or just plain confusion by diet and specific allergic testing.

Seborrheic eczema is the reflection upon the skin of a hypertrophic or functionally overactive sebacious mechanism influenced by heredity, age, disease and pathologically or physiologically disturbed hormonal secretion. Persons with a seborrheic diathesis have an abnormal carbohydrate metabolism, are susceptible to yeast and pyogenic infections in selective areas, a tendency to early hair loss in the male, and to follicular irritation by chemical agents either soluble in fat or made adherent to the skin by its presence.

Acne, rosacea and seborrheic eczema are the consequences in youth, middle and old age with occurence in women who "take after" their fathers and in men according to no particular rule.

Contact eczemas are those following exposure to chemical or physical irritants of such dilution or strength as to aggravate any skin, primary allergenic substances which have a potency so high that in sufficient concentration they are so able to sensitize all persons, and secondary allergens which are specific for a few. Foci of infection, either fungous or bacterial, may make a skin sensitive to contacts which it ordinarily would not respond to, and a simple dermatitis locally may, through neglect or unwise treatment, be broadened until the area becomes sensitized to one or more of several elements infectious or otherwise in the patient's environment. Infectious eczemas, usually intertrigenous or around open drainage are local inflammations caused directly by fungi, yeasts or bacteria in predisposed individuals.

Focal infections or fungi or bacteria may result in induction of an allergic state, resulting in the "id" mechanism which may be manifested by small sharply marginated patches of eczema far removed from the original focus or severe generalized cases of dermatitis. Infectious susceptibility may be hereditary, perhaps familial, or acquired, in which an initial infection instead of inducing an immunity confers a persistant susceptibility not necessarily to itself, but to other infections or allergens as well.

Chronic lichenoid dermatitis occurs in sympathicotonic persons having an allergic background. The mechanism is reversed here, in that the itch precedes the dermatitis which follows scratching.

Stasis either hydralic or functional results in eczema due to congestion, through favoring infection with staph, strep and fungi in dyshidrotic eruptions of the hands and feet, chronic eczema rubrum or varicose eczema in the aged, or facial dermatitis associated with rosacea in the seborrheic, chronic blusher or old toper. Involutional eczema of the ears, scalp, groins and extremities occurs in the debilitated and worn out. Medicaments are not an uncommon cause of eczema and parasites may be responsible for a severe dermatitis which will outlive the infestation.

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*Read before the Fifty-first Annual Meeting of Washington State Medical Association, Tacoma, Wash., Aug 25-28, 1940

Predisposing causes include heredity, under which the E.A.H.F. complex and seborrheic habitus have been touched on. The icthyotic skin can readily be penetrated by irritants, is aggravated by soap and water, and chaps easily, especially in winter. Hypothyroids, those with vitamin A deficiencies, and elderly people all tend to have dry skins as do those with diathetic eczemas, explaining why these people are usually better in the sweat of summer. Pigmentation is also good, as tanning seems to improve most eczemas, and very few colored people have them.

Metabolic influences are felt in diabetics who are susceptible especially to flexural infectious dermatitides, and nephritics whose abnormal water balance exaggerates the high water content of the skin found in diathetic eczemas. In liver dysfunction there is a loss of the detoxifying barrier to allergenic products from the intestines.

High fat and high carbohydrate diets increase the tendency to infectious and seborrheic diathesis. Dietary deficiency of vitamins or their failure of absorption through gastrointestinal pathology and old age, or too rapid metabolism in hyperthyroid and febrile disease, loses the seborrheic nasolabial and posterior auricular antidermatitic and hypochlorhydria prevention fractions of the vitamin B complex, the antixerodermatous effect of vitamin A, the calcium absorption encouragement of a more acid bowel and of vitamin D, and the not very well understood effect of vitamin C on arsenical and allied dermatitides. Gastric subacidity and so-called alkaline bowel allow the ascent of putrefactive and histamine forming flora from the lower bowel.

Environmental items of occupational, personal and household use with those from hobbies and casual contact, along with climate, season and weather all play a part in causation and prognosis.

The neurogenous and psychogenous component, through nervous overload, tension, chronic fatigue, repressions, conflicts, inhibitions, maladjustments, conspicuous successes or failures, etc. may lead to aggravation of an existing dermatitis or act as precipitating factor in the induction of one, or by inference retard one. Psychic tension may cause gastrointestinal malfunction, vasomotor congestion, increased fat secretion and sweating with the consequent lowering of the pH of ecerine sweat, disturbing the protective acid mantle of the skin against infection. With increased sweating the concentration of glucose and the alkaline protein secretion by apocrine glands of the axillae and genitals enriches yet more the culture media.

It may be well to note the alkalinity of imperceptible sweat as compared with the acidity of perceptible perspiration, explaining the higher incidence of infection, fungus, in more sedentary occupations and belieing the term, "athletes foot." Flexural sweating with its lowered oxygen tension affords a partial anaerobiosis. The atopic person has a distinctive restless personality and parents of allergic children may comfort themselves with the satisfaction that they will not be stupid or lazy.

Vagotonia, with its neurogenous type of edematous, blotchy, urticarial and occasionally profusely oozing dermatitis, manifests itself on the face, friction points of the neck, wrists and hands in persons given to violent itching and orgasms of scratching accenturated by emotional stress. A flushed face and neck, myosis and exophthalmus, nervous tension, frequent blushing, flushed or bluish cold hands and feet, gastric hypersecretion, increased motility of gastrointestinal tract, low blood pressure, bradycardia and eosinophilia help complete the picture.

Sympathicotonic persons with skins giving a pale stroke reaction (turns white on scratching), mydriasis, enophthalmus, gastric subacidity, increased basal metabolism, tachycardia, multiple allergic susceptibilities, reactivity to nervous strain, and oversensitivity to carbohydrates usually are associated with diathetic or chronic lichenoid varieties of dermatitis.

Sensory irritability is diminished in sympathicotonics by atropine, calcium, adrenalin and hyocine. It is increased by vagotonia, potassium salts, choline, histamine, pilocarpine, thyroidin and insulin.

Itching, probably the most important characteristic, at least from the patient's point of view, is a union of pain and touch and requires the tracts of both to be intact for its inception. It is largely a thalamic sensation with cortical inhibitions (worse at night or in fatigue) and influenced by suggestion or autosuggestion. Therefore, cortical sedatives, morphine and bromides, are of no direct value, while midbrain sedation by barbitals is indicated, and also those substances listed above as irritability diminishers for peripheral effect. Itching is a common accompaniment of diabetes, jaundice, psychoses and psychoneuroses, senile changes, and the lymphomas which by influence may make an existing eczematous condition worse. Itching cannot be displaced by pain, as in scratching, can occur in sleep or coma, may be referred, and has much in common with the sexual voluptuous sensation for which it sometimes substitutes.

CONCLUSION

I have attempted to outline the kinds of eczema which, singly or in groups, may be responsible for an existing dermatitis and to mention some of the predisposing factors which may influence its course.

642 Medical Arts Bldg.

DIPHTHERITIC MEMBRANE

Squire S. Bozarth, M.D.
Louis J. Wolf, M.D.
PORTLAND, ORE.

The manner in which laryngeal diphtheria may progress over a period of several days or longer before the true nature of the patient's infection is suspected is relatively well known. The distance to which the occluding membrane may extend down the trachea and into the bronchi, however, has been given comparatively little notice in the literature. Apparently the only illustrations on this point are to be found in articles by Bokay[1] and by Tull.[2] In Tull's two cases, extensive diphtheritic membranes were demonstrated on postmortem examination.

The following report concerning a membrane expelled by a patient who survived the infection will serve to reemphasize the very considerable extent to which the obstruction may develop in the presence of relatively mild preliminary symptoms and in the presence of negative cultures.

Case 1. G. S., a white woman, age 54 years, was admitted to the Isolation Hospital of the Portland Bureau of Health on May 6, 1940, complaining of a sore throat of approximately three weeks' duration. She gave a history indicating that possibly she had had diphtheria during childhood and that she had been under treatment for pernicious anemia during the past three years. During the present illness no exudate was visible and cultures, taken April 29 and May 3, were negative for *Corynebacterium diphtheriae*. On May 5 a positive culture was obtained.

On admission to the Isolation Hospital on May 6, examination revealed a well-developed, well-nourished patient. No respiratory embarrassment was present. Phonation was distinct, but the voice was slightly hoarse, and the patient whispered most of the time. An occasional cough, which was not croupy in character, was noted, and the patient expectorated moderate quantities of thick mucus.

Examination of the throat revealed generalized hyperemia of the faucial region, and the presence of a small patch of exudate less than 0.5 cm. in diameter situated on the posterior pillar of the left tonsil. Findings in the chest were essentially negative on inspection, percussion and auscultation. Physical examination was otherwise negative.

Temperature on admission was 97.2° F., pulse 94 and respiration 16. White blood cells numbered 16,000 with 84 per cent polymorphonuclear leucocytes.

The intradermal sensitization test was positive, and diphtheria antitoxin (20,000 U.) was given by the desensitization method. On the second day of hospitalization, after the Bureau of Health laboratory confirmed the presence of *Corynebacterium diphtheriae* in cultures taken from the nose and throat, an additional 20,000 units was administered. The general condition of the patient remained unchanged. She continued to cough occasionally, having one or two severe paroxysms daily.

During one of these, 54 hours after the administration of the first dose of antitoxin, she coughed up a diphtheritic membrane which apparently had extended from the larynx past the bifurcation of the trachea and into the bronchi (fig. 1). No respiratory embarrassment was noted at any time preceding the expulsion of this membrane. The patient made an uneventful recovery, and was discharged May 23, seventeen days after admission.

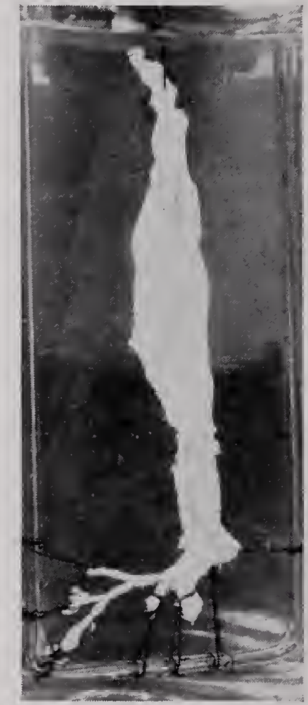

Fig. 1. Diphtheritic membrane from trachea and bronchi.

COMMENT

The outcome of this case was fortunate. Possibly this was because of the age of the patient, since diphtheria in adults tends to be much less dangerous than when the infection occurs in children. However, the accompanying photograph of the specimen of membrane eliminated by the patient serves to emphasize how far reaching the diphtheritic lesion can be in the presence of minimum clinical evidence and in the face of negative cultures during the earlier phase of such an illness.

Experience at the Isolation Hospital gives the impression that the possibility of minimum clinical evidence and of negative cultures, in cases actually developing in a far-reaching diphtheria of the lower respiratory tract, is not fully appreciated. Lack of recognition of this point may at times prove disastrous, particularly when children are affected. Youngsters, in whom a minmum degree of clinical evidence of diphtheria has been present for days, are not infrequently brought to the hospital in a moribund condition because the physician has been misled by the mildness of the early manifestations and because too much dependence has been placed on negative laboratory findings, until after the condition has become far advanced.

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[1] von Bokay, J.: Die Diphtherie seit Bretonneau, Ergeben. d. inn. Med. u. Kinderh. 42:592-593, 1932.

[2] Tull, M. G.: Extensive Diphtheritic Membranes Removed and Photographed, J. A.M.A., 104:1967-1968, June 1, 1935.

POSTGRADUATE LECTURES

During the year postgraduate courses of lectures are scheduled for the profession in our three states. In order that these courses may become well known, and be presented to the readers of this journal from month to month, they will be hereafter listed under the above heading with certain details pertaining to each as they may be received for publication. In this issue appear data which have been received descriptive of each course of the lectures. In the future issues it is expected that these will be supplemented as more information is received concerning each of them.

OREGON

University of Oregon Medical School Alumni Association General Postgraduate Session March 17-21.

University of Oregon Medical School Alumni Association Postgraduate Session and Ernst A. Sommer Memorial Lectures will include medicine, pediatrics, surgery, gynecology, ophthalmology and otorhinolaryngology.

Visiting lecturer will be Donald Guthrie, Chief, Guthrie Clinic, Sayre, Pennsylvania, and W. S. Middleton, Dean, Wisconsin Medical School, Madison, Wisconsin.

Noble Wiley Jones Lectureship

Auditorium, University of Oregon Medical School, April 3-4.

Speaker will be Bradley Patten, Professor and Director of Anatomy, University of Michigan Medical School.

Oregon Academy of Ophthalmology and Otolaryngology

University of Oregon Medical School and Oregon Academy of Opththalmology and Otolaryngology will hold its postgraduate course of lectures March 31-April 5.

Guest speakers will be Frank E. Burch, Professor of Ophthalmology, University of Minnesota Medical School and Harold I. Lillie, Head of Section of Otolaryngology and Rhinology, Mayo Foundation.

Courses For Which Information Will Be Published Later

May 19-21—University of Oregon Medical School Postgraduate Session in Medicine (Gastroenterology).

May 12-14 — Portland Academy of Medicine.

Sept. 2-3 — Portland Academy of Medicine.

Sept. 3-6 — Oregon State Medical Society Postgraduate Session.

WASHINGTON

Puget Sound Surgical Club

Seattle, March 15

Puget Sound Surgical Club will hold its annual meeting at Seattle, March 15.

Guest speaker will be Idys Mims Gage, Associate Professor of Surgery, Tulane University of Louisiana School of Medicine.

Spokane Surgical Club

April 19

Spokane Surgical Club will hold its annual meeting April 19, featuring clinics and lectures.

Guest speaker will be Alfred Blalock, Professor of Surgery, Johns Hopkins University School of Medicine.

Tacoma Surgical Club

May 3

Tacoma Surgical Club will hold its annual meeting with lectures and clinics in Tacoma May 3.

Guest speaker, Harry E. Mock of Chicago, his subject being "Traumatic Surgery."

Pacific Northwest Medical Association

Spokane, June 25-28.

This postgraduate course consists of lectures on bronchoscopy, pathology, neurology, internal medicine, surgery, physiology, endocrinology, roentgenology and obstetrics. Names of lecturers and other details will appear in subsequent issues.

University of Washington Annual Graduate Medical Course

Seattle, July 14-18.

Guggenheim Hall, University of Washington, July 14-18.

Lecturers for this course will be as follows:

Maurice G. Pincoffs, University of Maryland. Subject: Medicine.

Max Thorek, American Hospital of Chicago. Subject: Surgery.

John Saunders, University of California. Subject: Surgical Anatomy.

Howard C. Naffziger, University of California. Subject: Neurosurgery.

IDAHO

State Medical Association Annual Lectures

Sun Valley, June 18-21.

The annual meeting of the State Medical Association provides a postgraduate course of lectures. The program for the Sun Valley meeting in June will present speakers from Stanford University School of Medicine, who will be as follows: William Dock, pathologist; David Rytand, internist; Nelson Howard, surgeon; Carleton Mathewson, surgeon; Morris R. Tainter, pharmacologist.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-SEVENTH ANNUAL MEETING, PORTLAND, SEPT. 3-6.

ORGANIZATION ACTIVITIES

MEETING OF THE STATE COUNCIL

The Council of Oregon State Medical Society met in Portland February 1. It is gratifying to note the regular attendance of the Councillors from distant parts of the state and it must be remarked that those from out of Portland outnumbered the Portland councillors. The following officers and councillors from outside of Portland were present, as they have been quite regularly: W. W. Baum, Salem; G. C. Bellinger, Salem; J. R. Rankin, Coquille; L. M. Spaulding, Astoria; R. W. Hemingway, Bend; C. J. Bartlett, Baker; L. S. Kent, Eugene. H. L. Blosser, Portland, attended as representative of the Board of Medical Examiners.

The Oregon Physicians Committee for Extension of Medical Service was organized. R. L. Benson was elected Chairman, R. H. Keane and Clyde C. Foley were elected Secretary-Treasurer and Executive Secretary respectively. George E. Henton was appointed vice-chairman.

A charter was granted to the newly organized Washington County Medical Society.

The Committee on Public Policy discussed measures affecting the practice of medicine and public health pending in the State Legislature. Council recommendations on these measures were authorized to be forwarded to the component societies so that members could contact and inform their representatives and senators as to the attitude of the medical profession on specific legislation.

The existing fee schedule of the Public Welfare Commission was accepted with revisions which corrected certain inconsistencies.

Approval was granted to the request of the Linn County Medical Society to allow the Physicians and Surgeons Hospital Association of Salem to extend its activities to Linn County.

Two applications for life membership were read. Attention was called to the necessity of keping every member on the active list because of the reduced income due to members being called to service. The policy of the Society in this matter is determined by the By-Laws which implies 30 years of practice, 65 years of age, and retirement from active practice.

The Committee on Charitable Medical Care reported its recommendations, summarizing a mass of material it has been studying for several years. This type of work requires thoughtful consideration of the many ramifying features involved and acceptance by the Council establishes the policy of the State Medical Society in such matters.

Under consideration this time was the proposed organization by the Farm Security Administration of a nonprofit corporation to provide medical care to migratory agricultural workers. The committee preferred that such a corporation be *not* formed and the State Public Welfare Commission would be the logical organization to administer this type of work. In case this did not prove legally possible, the committe set down certain principles which should be followed in case the F. S. A. did establish a nonprofit corporation to render this type of medical service. These principles were adopted by the Council and are as follows:

1. Operations shall be limited to the State of Oregon and not include Washington and Idaho as proposed.
2. The Oregon State Medical Society shall act only in an advisory capacity to the corporation and shall not participate directly on the Board as proposed.
3. Matters of policy are to be referred to the Oregon State Medical Society and not decided on by individual county societies. (This obviously is to be assured of a constant and consistent policy throughout the state.)
4. The corporation should employ physicians on a full time basis, or even a part time basis, provided, in the latter case, suitable provisions are made for rotation of this service in the various counties.
5. Supervision of medical service should be under a Medical Director who has been approved by the Oregon State Medical Society before appointment.
6. Certification of physicians shall not be refused by the Board except on recommendation of the local society and provided such physicians have the right of appeal to the Oregon State Medical Society.
7. The schedule of fees was not approved.

SOCIETY MEETINGS

CLACKAMAS COUNTY MEDICAL SOCIETY

Clackamas County Medical Society reports some of its activities of the past year. New members are Drs. Barr and Renfrew of Canby. Speakers at meetings during the year included Drs. Underwood, Portland, who spoke on "Diseases of the Kidney"; S. H. Goodnight, Portland, who spoke on the "Use of the Sulfanilamide Group in Pediatrics."

At the annual meeting in Oregon City officers were elected for the coming year as follows: A. H. Huycke, president; J. G. Cleland, vice-president; and W. R. Eaton reelected secretary-treasurer, all of Oregon City.

MULTNOMAH COUNTY MEDICAL SOCIETY

Multnomah County Medical Society in Portland met February 5. The program was sponsored by the Oregon Academy of Ophthalmology and Otolaryngology. Wilson Johnston discussed "The Hard of Hearing Child," Paul Bailey considered "Early Diagnosis of Bronchial Foreign Body," and Frederick Kiehle spoke on "The Glaucoma Problem."

The second meeting of the month was held February 19.

The Portland Sanitarium Staff presented a symposium on Causes of Death in the New Born. Roderick C. Blatchford discussed "Obstetrical Aspects," Warren C. Hunter discussed "Hematological and Pathological Aspects," and Samuel G. Henricke presented "Pediatric Aspects and Treatment." A motion picture, "Studies in Human Fertility," was also presented.

UMATILLA COUNTY MEDICAL SOCIETY

Umatilla County Medical Society met February 11. Dr. Carl Johannesson of Walla Walla discussed "Early Diagnosis of Certain Chest Conditions." The talk was accompanied by roentgen plates and a general round-table discussion followed.

STATE BOARD OF HEALTH

The recently conducted Postgraduate Obstetrical Course, held at the University of Oregon Medical School, was attended by twenty-eight physicians. The course received the enthusiastic response of all those present, and a wish was expressed that it be made an annual affair.

Warren H. Gardner, Ph.D., Consultant in Hearing and Vision of the Division of Maternal and Child Health, has been assisting the Marion County Health Department, the local medical society, and Salem Schools in conducting a hearing conservation program.

The Division of Maternal and Child Health participated with the School of Home Economics, Extension Division of Oregon State College, in a one-day program on nutrition, as a part of the Home Interests Conference held in Corvallis, February 25-28.

Miss Alice Brackett, Public Health Nursing Consultant of the United States Children's Bureau, was a visitor to Portland on February 3. She was en route to her office in San Francisco.

The United States Public Health Service announces the transfer of Miss Mary D. Forbes, Regional Public Health Nursing Consultant, from the New England States to District No. 5, with headquarters in San Francisco. Miss Anna Heisler, formerly Regional Public Health Nursing Consultant for this district, has transferred to New York.

MEDICAL NOTES

Portland Academy of Medicine. Dr. Owen H. Wangensteen, Professor of Surgery at University of Minnesota Medical School, and Surgeon-in-Chief, University of Minnesota Hospital, delivered a series of three lectures in the auditorium of University of Oregon Medical School February 13-15. The subjects were "Studies in Etiology of Appendicitis," "Practical Aspects of Therapeutics Problem in Bowel Obstruction," and "Ulcer Problem Viewed from Standpoint of Etiology and Therapy."

Oregon Academy of Ophthalmology and Otolaryngology elected S. A. Kleger, Astoria, president for the coming year; Howard E. Carruth, Portland, vice-president and Lewis W. Jordan, Portland, secretary.

Negotiations by the Presbyterian Church of Portland for possible acquisition of Coffey Memorial Hospital, Portland, have been cancelled.

Wilson D. McNary, superintendent of the Eastern Oregon State Hospital at Pendleton, has announced his intention to resign because of ill health. He has served twenty-nine years at his present position and prior to this was at the hospital in Salem for sixteen years.

Annual Meeting of Oregon Association of Hospitals. The annual meeting was held February 19 in Portland. P. J. Bartle of Eugene General Hospital was elected president; A. L. Moreland of Emanuel Hospital, Portland, vice-president; and Grace Phelps, Doernbecher Hospital, secretary-treasurer. Speakers at the annual banquet were Richard Adams and Frank B. Riley.

Sacred Heart General Hospital of Eugene. Ground was broken for erection of a six story wing costing $150,000. The building will be completed by the first of October, making this a 200-bed hospital, largest in Oregon outside of Portland. The Sisters of St. Joseph of Newark operate the hospital.

Clinic Building at Redmond will be erected by Drs. Christiansen and Howard Wells. It will contain consultation rooms, surgery, laboratory and space for hospital beds.

OBITUARIES

Dr. Paul B. Cooper of Portland, died February 23 as the result of an automobile accident. He was 60 years of age. He was born at McMinnville, Oregon, December 11, 1880, and received his medical training at Northwestern University, graduating in 1908. He practiced in Yakima from 1909 to 1924, and in Portland since 1924.

Dr. Arthur H. Johnson of Portland, died of coronary arteriosclerotic stenosis on February 17, at the age of 71 He was born at Columbus, Wisconsin, January 27, 1870, received his medical degree from the University of Michigan in 1895, and his license to practice in Oregon in 1896.

Dr. Roy A. Payne of Portland, died February 12, at the age of 55. The cause of death was melanocarcinoma of the toe with metastases to liver, bone and brain. He was born at Pleasant Valley, Missouri, November 25, 1885, received his medical degree from University of Minnesota in 1915, and practiced in Portland since 1916. Dr. Payne was president of the Multnomah County Medical Society in 1940 and for many years had been active in the affairs of the county and state medical societies. He held the rank of Clinical Associate in Internal Medicine at the University of Oregon Medical School and was a member of the Oregon State Board of Health. He was past president of the Pacific Coast Roentgen Ray Society, a fellow of the American Roentgen Ray Society and member of the North Pacific Society of Internal Medicine.

SURVEY OF REGISTERED NURSES

In line with the national defense program, a survey has just been launched in Oregon to determine the nursing potentialities in this state. The purpose of the survey is to build up a directory of registered nurses which will give their qualifications and willingness to work either all or part time in case of an emergency.

Mrs. Linnie Laird, Executive Secretary of the Oregon State Nurses' Association, has just been appointed a special agent in Oregon for the U. S. Public Health Service. She is sponsoring the survey with the three national nursing organizations as cosponsors in cooperation with the American Red Cross.

Questionnaires have been mailed to all known registered nurses in Oregon, but we are anxious to reach every graduate registered nurse in the state who has ever been registered here or any other state. Filling the questionnaire does not in any way obligate the nurse. Without this information that the nurse can best supply, there is danger of increasing the number of nurses too rapidly with resulting unemployment or of failing to meet the nation's need. Nurses who have filled out the questionnaire are asked to return them promptly and those who have not received one are urged to notify Mrs. Laird at 301 Stevens Building, Portland.

Mrs. Aura Johnson Neely, R.N.
Chairman, Public Information Committee

POSTGRADUATE SESSION

UNIVERSITY OF OREGON MEDICAL SCHOOL ALUMNI POSTGRADUATE SESSION AND ERNST A. SOMMER MEMORIAL LECTURES

March 17-21

The program provides instruction in the fields of General Medicine, Surgery, Radiology, Ear, Nose and Throat, Eye, Pathology. Mornings will be devoted to lectures in these six fields. Afternoons will feature small groups in clinics and instruction in the Outpatient Clinic, Hospitals and Laboratories. Evenings will be spent in lectures by nationally prominent members of the profession and class reunions.

The Ernst A. Sommer Memorial Lectures will be given by W. S. Middleton, dean of the University of Wisconsin Medical School, and Donald Guthrie of the Guthrie Clinic of Sayre, Pennsylvania.

Dr. Guthrie's topic will be "Diagnosis of Cancer of the Breast and Its Surgical Management," March 18, 8 p.m., Medical School Auditorium.

Dr. Middleton's subject will be "Further Rationalized Therapeutic Experiences," March 19, 8 p.m., Medical School Auditorium.

Under the six major fields mentioned above will be delivered addresses by Oregon Medical School alumni, including many subjects which will be detailed in the general program.

The Alumni Association program includes class reunions, dinners, round table luncheons, business meeting with election of officers, with annual banquet and entertainment Thursday evening at Multnomah Hotel.

BOARD OF MEDICAL EXAMINERS

As a result of the State Board examinations held January 14-16, licenses to practice medicine and surgery within the State of Oregon were granted to Will Charles Davis and Robert Douglass Johnston of Portland, and a license to practice osteopathy and surgery was granted to John Shields Gilhousen of The Dalles.

The 1941 Report and Directory is being published under date of March 1, covering activities of the Board for 1940 and includes all physicians registered for 1941. A copy of this Report will be mailed to all registered physicians and additional copies are available upon application to the Board office at 608 Federal Building, Portland.

In this Report attention of physicians is called to the fact that every applicant for admission to the practice of medicine and surgery or osteopathy and surgery, whether by examination, reciprocity or endorsement, must submit with the application an Oregon Basic Science certificate. This is a prerequisite to licensing which cannot under the law be waived. Individual physicians who answer inquiries from fellow practitioners in sister states are urged to advise such practitioners to address the Board of Medical Examiners, Portland, concerning Board requirements for admission to practice in Oregon, and to address Mr. Charles D. Byrne, Secretary, Oregon State Board of Higher Education, Eugene, concerning qualification in the basic sciences.

WOMAN'S AUXILIARY

The Woman's Auxiliary to Multnomah County Medical Society held its first meeting of the fiscal year in the Medical Dental Building Auditorium at 2 p.m., February 24. Speaker for the day was Dr. Edward Hume, a graduate of Johns Hopkins and later professor of medicine and Dean of the Medical School, Yale University, at Changsha, China. Dr. Hume is now connected with the National Christian Mission. His subject was "Religion and Health." Special invitations were extended to nurses organizations, the junior medical auxiliary and other guests to hear Dr. Hume.

Members of the board met for the first meeting of the new term, at 11 a.m., February 10. Names of committee members were announced, committee chairmen presented and the budget accepted for the coming year. Plans for each monthly meeting were outlined. It was decided particularly to stress medical problems of informative nature this year and to secure speakers to carry out such a program. Members are to be urged to engage in all activities of the Red Cross. A plan was discussed for trained nurses among the members to enroll for special advanced courses.

The study group met February 24, at 10 a.m. to review a book on changes in the curriculums of medical schools.

Officers for the new fiscal year were installed January 27, at a meeting and tea held at the home of Mrs. R. Lindsay McArthur. Mrs. Charles Manlove is president. Preceding installation ceremonies, annual reports were read by retiring officers and committee chairmen. Tea was served following the meeting. Special guests were board members of the auxiliary to the Oregon State Medical Society who had attended a meeting in the morning of that day.

Mrs. Evelyn Wall McArthur,
Chairman, Press and Publicity.

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-SECOND ANNUAL MEETING, SEATTLE, AUG. 24-26

PROSPECTIVE MEDICAL LEGISLATION

Olympia, Wash., Feb. 24, 1941

Previous to the date of this announcement numerous bills were introduced before the legislature, applying directly or indirectly to the practice of medicine. Herewith is presented a summary of bills directly affecting medical practice in order that the profession may be informed concerning measures that may be enacted into law in which they are specially interested.

Next month's issue will publish reports of acts that have been adopted with comments pertaining to them. If any member of the profession has suggestions, protests or comments which he wishes to express regarding these bills, they should be addressed to Mr. Arthur Anderson, Executive Secretary, Governor Hotel, Olympia.

Marriage Certificate

Senate Bill 12. By Senator Schroeder. Requires serologic test certificate before marriage. Referred to Committee on Medicine, Dentistry, Pure Foods and Drugs.

Requires all applicants for marriage licenses to submit a certificate showing that such applicant has taken a serologic test and is not infected with syphilis.

Note: This bill passed the Senate and is now in the House Medical Committee. This measure may be amended to carry a stipulated fee. There is a possibility that the bill will be defeated in the House.

Medical Aid Contracts

Senate Bill 181. By Senator Sullivan. Relates to Medical Aid Contracts. Referred to Committee on Industrial Insurance.

Amends Sec. 7724 Rem. Rev. Stat. to provide that all medical aid contracts may be terminated at any time by majority vote of the employees; and to provide that no new employee shall be bound by such medical aid contract unless such workman accepts the provisions thereof in writing.

Amends Sec. 7714 Rem. Rev. Stat. to provide that injured workman being treated away from his residence must upon request be transferred to a physician of his own choice at the expense of the contract holder of such contract; includes the replacement of glasses as a proper charge against the accident fund.

Note: This is another Labor bill.

Indigent Insane

Senate Bill 212. By Senator Balfour. Relates to State Charitable Hospitals. Referred to Committee on State Charitable Institutions.

Relieves the counties from liability for the payment for maintenance of indigent, nonviolently insane persons in state institutions between January 1, 1939 and April 1, 1941; provides that any county having made payment shall not be entitled to a refund. Declares an emergency.

Health Insurance

Senate Bill 247. By Senators Black and Farquharson. Relates to Health Insurance. Referred to Committee on Social Security.

Provides that, beginning one year after the effective date of the act, premiums shall be paid by both employer and employee to the Health Insurance Board; provides for a weekly schedule of contributions by the employer of 40c per week, of employees from 10c a week where the wages are $15 or less to 40c a week where wages are $25 or more, and for a state contribution ranging from 60c a week where the wages are $15 or less to 40c a week where wages are $25 or more.

Makes the benefits payable to all persons suffering disability who have paid 20 premiums in any one year or 32 payments in any two-year period; requires seven-day waiting period and makes the benefits payable range from a minimum of $6 a week to a maximum of $16 a week; provides for maternity benefits to those who have made at least 50 premium payments within a two-year period; provides an additional $15 payment at the time of birth of the child.

Provides that the Board shall supply medical benefits; prescribes the conditions under which such service shall be supplied, and the extent of such medical or hospital service allowed; provides that in case the funds are not sufficient to furnish full medical benefits, such services may be curtailed; gives the Board power to supply glasses, artificial limbs, trusses and dentures; permits persons not within the purview of the act to elect to come under and pay the premiums; requires such individual pay at least three-fourths of the combined employer's and employees' contribution.

Creates a Health Insurance Board to be composed of the commissioner of health insurance and thirteen members to be appointed by the governor, four to represent employers, four employees, two physicians, one specialist, one dentist and one hospital representative; fixes the compensation at $10 per diem and actual expenses; requires the headquarters of the Board to be at Olympia; gives the Board power to establish standards of administration, make rules and regulations, supervise the administration, review findings, remove practitioners after hearing for cause, take steps to improve health and sanitation in any locality, and report biennially to the governor and the legislature.

Provides for appointment of a commissioner of health insurance; fixes the salary at $5,000; makes him the chief executive officer; gives the commissioner direct control of the administration of health insurance, with the right to appoint or employ local finance medical managers, set up local councils and furnish medical benefits to persons insured or pay sums equivalent to the cost of such benefits.

Provides that local councils shall be the representative of the state to furnish service, and be composed of one doctor, one employer, one employee, and one representative of hospitals, plus the local finance manager and a public health officer to be selected by the county court.

Gives local councils the right to arrange with practitioners for furnishing of service and to pay such practitioners a salary, on a per capita basis, a fee system or any special arrangement that may be agreed upon; makes it the duty of the local finance manager to collect all premiums, make all disbursements in maternity cases, defray all expense of medical benefits, pass upon all matters pertaining to financial administration, pass upon all claims, and generally supervise the rendering of all services.

Provides that every practitioner in the state without discrimination, shall be entitled to be included in the list of those furnishing medical benefits; gives persons entitled to medical benefits the right to select their own doctor or dentist so long as he is on the council's eligibility list; provides for the appointment of a referee to hear matters in controversy, with right of appeal to appeal board, and a further appeal to the courts; makes such procedure jurisdictional and exclusive.

Creates a full-time appeal board to be appointed by the governor; fixes the salary at $3,000 per annum; authorizes the appeal board to appoint referees; permits any member of the court or a referee to hear appeals.

Creates a Health Insurance Fund; sets aside one-fourth of all premiums received for maternity benefits; makes the state treasurer disbursing officer and custodian of funds; authorizes investment of surplus monies.

Provides that, where the beneficiary receives benefits from any other public funds, the Health Insurance Fund shall be reimbursed from sums paid such individual; requires every employer to keep a record of his employees, time they have worked, and make such reports to the Board of Health Insurance as may be required.

Authorizes civil actions against employers to collect premiums; makes unpaid premiums a prior claim except for taxes or wages due for labor performed within 90 days immediately preceding; authorizes the distraint of employer's property for collection of premium.

Makes all benefits nonassignable and exempt from attachment or levy under execution; provides penalties for violation of the act; preserves a separate validity of all sections; appropriates $100,000 from the general fund for expenditures under the act.

Public Hospitals

House Bill No. 471. By Dr. U. S. Ford. Referred to House Committee on Medicine.

This bill permits counties having less than 25,000 population to acquire and operate public hospitals by a levy of a tax not to exceed 3 mills and issue general obligation bonds. It calls for free hospitalization to any resident or taxpayer within a hospital district with slight charges for those outside of the district. A hospital now existing within such a district or area, unless purchased by such a commission, would be competing against free hospitalization.

The fact that this measure holds only to districts or counties of 25,000 population does not necessarily mean once such a district is established that the law could not be amended by future legislatures to eventually include all counties within the state. An expression regarding this measure should be made directly to the House Committee on Medicine, Dentistry, Pure Foods and Drugs, immediately.

Sight-Saving

Senate Bill 249. By Senator Haddon. Relates to Sight-saving Equipment. Referred to Committee on Education.

Authorizes the State Superintendent of Public Instruction to provide sight-saving equipment, to be loaned to public schools for use of children with defective vision where there is not a sufficient number of pupils in such schools with defective vision that would justify the establishment of a separate sight-saving class.

Medical Aid Contracts

House Bill 160. By Member Bienz (By Request). Relates to medical aid contracts. Referred to Industrial Insurance Commission.

Repeals Chap. 50, Laws of 1939, which provided for lieu medical aid contracts.

Note: This repeals the entire medical aid contracts law.

A Lydon Bill

House Bill 202. By Member Ryan. Relates to Vaccination. Referred to Committee on Medicine, Dentistry, Pure Foods and Drugs.

Prohibits enforcement of compulsory vaccination; defines types included under the act; excepts Federal employees from provisions of the act; provides that all fines and forfeitures shall go into a Noncompulsory Vaccine-Serum Fund; preserves a separate validity of all sections; repeals all acts in conflict. Declares an emergency.

Note: This is a measure created by John E. Lydon, sanipractor, who endeavored to get the Christian Scientists to back it, and finally prevailed upon Representative Ryan (colored) to introduce the measure. The bill will die in Committee.

Tuberculosis Sanitarium

House Bill 307. By Member Lennart. Relates to Whatcom County Sanitarium. Referred to Committee on Medicine, Dentistry, Pure Foods and Drugs.

Appropriates $65,000 from the general fund for construction of a turberculosis hospital in Whatcom County to match $85,000 authorized by county bond issue.

Note: Referred to the State Association's Tuberculosis Committee.

Sterilization

House Bill 360. By Member Hurley. Relates to Sterilization. Referred to Committee on Public Morals.

Repeals Chap. 53, Laws of 1921 which authorized the sterilization of inmates of certain state institutions who were determined to be a social menace.

Registration Fee

House Bill 370. By Committee on Medicine, Dentistry, Pure Foods and Drugs. Relates to Physicians and Surgeons. Passed to Second Reading.

Fixes the fee for certificate to practice medicine and surgery at $25; and provides for an annual renewal fee of $5. Repeals all acts in conflict.

Note: This is an amendment to the Medical Practice Act, and calls for a $5 registration fee for each physician in the state.

Drugless Physicians

House Bill 371. By Committee on Medicine, Dentistry, Pure Foods and Drugs. Relates to Therapeutics. Passed to Second Reading.

Requires all practitioners of drugless therapeutics to be licensed; provides qualifications for all applicants for license; defines the scope of drugless therapeutics; provides for appointment of an examining committee of three licensed practitioners of drugless therapeutics to be appointed by the governor, who shall conduct examinations and shall receive $10 per diem plus expenses.

Permits granting of a license without examination to all practitioners who have been in continuous practice for three successive years prior to application, and who have the necessary educational and other requirements; provided such applicant has passed the basic science examination; provides for the suspension or revocation of a license for cause after hearing; gives the aggrieved party right of review by the Superior Court of Thurston County; requires all practitioners whose licenses have been suspended or revoked to surrender license.

Provides for an annual renewal fee of $5; fixes the fee for original license at $25; requires all licensees to observe all the regulations relative to the control of contagious diseases; provides that such license shall not authorize such one to practice medicine, surgery, obstetrics, chiropracty or osteopathy.

Prohibits anyone from attempting to practice without complying with the requirements of the act unless in case of emergency; and excepts members of the army or navy, licensed dentists, physicians and surgeons, osteopathists or chiropractors; makes this act supplemental to existing laws; preserves a separate validity of all sections. Declares an emergency.

Note: This is a rewrite of the Drugless Physicians Act, and limits their scope of activity, eliminates the word "physician" and replaces it with the word "practitioner" so that they will be known, if this is enacted, as drugless practitioners. This applies to sanipractors, naturopaths, etc. The State Association is heartily in accord with this bill and it is suggested that physicians write to their Representatives approving the measure.

This Bill passed the House Feb. 20 with 64 votes for, 20 against and 9 absent. It is now in the hands of Senate Medical Committee. Letters are suggested to Medical Committee of Senate and to Senators urging its passage.

Physical Examinations

House Bill 383. By Member McDonald. Relates to Physical Examinations. Referred to Committee on Labor and Labor Statistics.

Requires all persons working in places where food is served, prepared or processed, and persons employed in barber shops, beauty parlors and cosmetological establishments to have a physical examination, including blood tests, within 90 days after the effective date of the act and annually thereafter; provides that all examination fees shall go to the general fund.

Birth Reports

House Bill 385. By Member Schumann. Relates to unreported births. Referred to Committee on Judiciary.

Provides for registering with the state registrar of vital certificates of all unrecorded births by filing of an order of court whereby the court has, after hearing, established the date, place and other facts pertinent with reference to the birth of the person for whom a certificate of registration is sought. Repeals all acts in conflict. Declares an emergency.

Public Health Merit System

Senate Bill 277. By Committee on Medicine, Dentistry, Pure Foods and Drugs. Relates to Public Health. Placed on General File.

Authorizes the State Board of Health to adopt rules and regulations governing merit system plan for employment of personnel in the Department and to require counties to submit annually plans of administration for personnel engaged in public health in such counties.

Note: This bill was passed by the Senate Feb. 21; it will probably pass the house. It has the approval of the State Association.

Bills Pertaining to Children

Senate Bill 263. By Senator McGavick. Relates to Child Welfare. Referred to Committee on Judiciary.

Provides that custody of a child can be transferred from its parents only by order of court; makes all relinquishments or transfers otherwise void; provides for awarding custody of such minors to child welfare agencies after a hearing.

Senate Bill 264. By Senator McGavick. Relates to Dependent Children. Referred to Committee on Judiciary.

Establishes a juvenile court in each county to have original jurisdiction over delinquent, neglected, dependent or defective children; requires preliminary investigation of the cases of all children brought to the attention of the court; requires filing of a petition and service of notice upon the parents before a hearing can be held; authorizes the court to make orders necessary or proper for the future welfare of such child.

Senate Bill 265. By Senator McGavick. Relates to Child Adoption. Referred to Committee on Judiciary.

Permits any adult to petition to adopt a child; requires consent of all persons over 12 years of age for whom adoption is sought; requires consent of the parents except where parental rights have been terminated by court order transfer of child to welfare agency, or otherwise; requires consent to be in writing and filed in the records; provides for filing of a petition and service of a copy upon the Division for Children.

Note: These three bills were referred to Dr. H. H. Skinner, Yakima, Chairman of the Maternal and Child Welfare Committee, Washington State Medical Association, for review and comment.

MEDICAL NOTES

Hospital Meeting. The Association of Western Hospitals held its fifteenth annual convention at San Francisco, March 3-6. More than 2,500 delegates attended the meeting, which included representatives from hospitals in the eleven western states. Hospital preparedness was the main topic of interest. Clarence J. Cummings, former superintendent of Tacoma General hospital, is president of the association.

Health Association Plans Meeting. Plans are being laid for annual meeting of Washington State Public Health Association in May. It will be in Yakima, and it is expected that about 200 will attend the convention. Wallace Hunt, King County Health Officer, is president.

Military Hospitals. A five hundred-bed hospital for the 41st Division of the National Guard Encampment at Fort Lewis was recently completed. A new base hospital at Vancouver Barracks is nearing completion. It will probably be finished early in March. The Medical Corps will then take over and operate the $1,091,000 plant. It is to be called Barnes General Hospital, named for General Joseph K. Barnes, surgeon-general of the U. S. Army from 1864 to 1882.

Hospital Bids Called. Bids, called for the new $65,000 Cowlitz County Hospital at Longview, will be opened March 18 at Kelso. It is expected the hospital may be finished by September 1.

Hospital Nearing Completion. The new wing under construction at Pierce County Hospital, Tacoma, is expected to be ready for occupancy by the latter part of May.

Hospital Cuts Cost. Patient day cost at Kitsap County Hospital, opened in May, 1940, has been reduced. Total budget is somewhat higher, but for the first half of 1940 patient day cost was $1.60. During the second half of the year the average patient day cost was $1.39.

Hospital Enlarged. Remodeling and enlarging of the Omak Hospital has increased it to thirty-four beds.

Northwest Section of American Dietetic Association will hold a meeting in Pullman, April 6-8. Miss Mary I. Barber, president of the Association, will be chief speaker on the program and at the annual banquet. Other well known nutritionists will be present and participate in the program.

Official Positions. Richard Woodward has been named county physician of Payette County. He succeeds C. C. Paxton who is retiring from public and private practice. C. V. Belknap of Nampa was named county physician of Canyon County. Deputy physicians appointed were S. A. Swayne of Nampa, R. E. Talbot of Wilder, H. L. Randolph of Caldwell, W. M. Mitchell of Parma. W. R. Werelius has been named county physician of Bonner County with W. F. Tyler assistant physician and deputy health officer. L. J. Stauffer, Priest River, also acts as a deputy health officer. W. S. Douglas has been reappointed county physician for Nez Perce County.

Locations. C. C. Gaarde, formerly of Spokane, has opened an office at Bremerton. John R. Campbell, formerly of Eugene, Ore., has moved to Tacoma. Highland Dean, formerly of Ellensburg, has moved to Oak Harbor.

Appointments to Official Positions. W. C. Trowbridge has received reappointment as city health officer of Goldendale. J. P. Mooney has been appointed health officer of Roslyn. Harold Brown was reappointed health officer of Cle Elum. J. F. Poynter has been named health officer of Davenport. C. R. Fargher was named county-city health officer for Vancouver and Clark County. C. E. M. Touhy has been reappointed superintendent of Snohomish County Hospital, and J. M. Meeske continues as the Snohomish health officer. A. E. Lein is reappointed county physician of Spokane County and has gone to Boston for four months postgraduate work in public health. John B. Porter has been reappointed county physician for Kitsap County. Johan C. Wilk has been named member of the city health board at Bellingham.

OBITUARIES

Dr. Samuel L. Caldbick of Everett, died February 9, age sixty-five. He was born in Brussels, Ontario, Canada, August 6, 1876, and came to the United States about 1900. He graduated from Saginaw Valley Medical College, Saginaw, Michigan, in 1902. He practiced in the east for a time, then moved to South Dakota. After several years there, he moved to Everett, where he began pratcice in 1910, and has practiced continuously since.

Dr. William Edwin Case of Vancouver, died February 1 at the age of seventy-nine. He was a graduate of Washington University School of Medicine, St. Louis, and had lived in Vancouver for thirty-five years. After graduating from medical school in 1899, he served as Captain in the Army Medical Corps until 1908. He was transferred to Vancouver from the Philippine Islands in 1906. He retired from active practice about one year ago.

Dr. Harman Talley Rhoads of Everett, died February 6, aged sixty-one. He was born in Wichita, Kansas, January 8, 1880, and reecived his medical education at University Medical College at Kansas City, graduating in 1910. He practiced for a time in Arkansas, then moved to Montana and came to Everett in 1924. He specialized in eye, ear, nose and throat work.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

Regular meeting of Cowlitz County Medical Society was held at the Monticello Hotel, Longview, February 19.

Bills affecting the welfare of the medical profession which had been presented in the state legislature in Olympia were read and discussed. Motion pictures furnished by Davis and Geck were shown. Guests were Richard Hays, former member of the Society, and Dr. Hephlen of Richfield.

KING COUNTY MEDICAL SOCIETY

King County Medical Society held a meeting February 3, in auditorium of Medical-Dental Building, Seattle, at 8:15 p.m., president Irvin A. Weichbrodt presiding. E. D. Anderson was elected to membership. Applications were received from Samuel Lippman, A. C. Powell and W. E. Russell.

The first number on the program was an address by Mrs. Elizabeth Soule, Director of School Nursing Education, University of Washington, who discussed "Our Mutual Problems." She described the institution of a number of national nurses organizations, including their purpose and administration.

Miss Margaret Felton, Educational Director, Providence School of Nursing, Seattle, presented a paper on "Progress of Local Nursing in the Past Decade." She described the development of nursing schools and presented in detail the establishment and administration of the school in Providence Hospital.

Miss Harriet Smith, Director of Nursing, King County Hospital, presented a paper on "How the Graduate Nurse Serves the Community." She discussed the functions of the nurse, giving interesting details descriptive of many phases of the nurse's activities.

Miss Dorothy I. Anderson, president of Washington State Dietetic Association, presented a paper on "How the Dietition Can Help the Physician." She presented many interesting suggestions pertaining to the relations between the physician and dietitian.

J. M. Blackford read a paper on "Seattle Hospital Council." He described the six largest private hospitals in Seattle regarding their tax-free charters and methods of operating. There was a discussion of hospital costs, with various financial considerations.

KITSAP COUNTY MEDICAL SOCIETY

The regular meeeting of Kitsap County Medical Society was held at the Olympic Hospital, Bremerton, February 10. Woman's Auxiliary to the Medical Society joined in the meeting and members of the Tuberculosis League and Nurses Association were guests. The evening was given to discussion of problems in tuberculosis work by Fred Exner, John Nelson and Byron Francis, all of Seattle.

LEWIS COUNTY MEDICAL SOCIETY

Annual meeting of Lewis County Medical Society was held January 2, at Centralia. J. F. Hackney of Centralia was named president for the ensuing year. Other officers for 1941 were J. P. McDermott, Chehalis, vice-president; and Rush Banks, Centralia, reelected secretary-treasurer.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of the Pierce County Medical Society was held in the Medical Arts Building, Tacoma, February 11, with president H. J. Whitacre in the chair. Minutes of the previous meeting were read and approved.

C. C. Carlson read a paper on "Psychosomatic Medicine," in which he discussed emotional causes of physical illnesses and described cases illustrating physiologic dysfunction resulting from emotional upsets.

Carl Scheyer gave a paper on "The Traction Cast for Fractures of the Humerus." He discussed the anatomy and showed by illustration the typical displacements, describing the application of the hanging cast.

Bernice M. Hazen and John R. Campbell were admitted to membership.

SPOKANE COUNTY MEDICAL SOCIETY

The regular monthly meeting of Spokane County Medical Society was held February 13. Interesting papers were presented by R. A. Lower on "Nonopaque Foreign Bodies of the Lung," with a discussion by Paul Remington. Donald Palmer read a paper on "An Unusual Case of Cardiospasm," roentgenograms of which were discussed by Milo Harris, and D. W. Gaiser discussed "Gastrostomy."

Lieutenant Wahlgren of the recruiting service of the Army showed two sound motion pictures, "The Army on

Wheels" and "Service With the Colors," which were greatly enjoyed.

Special meeting of the Spokane County Medical Society was held at the Desert Hotel, Spokane, Monday, February 17. Dinner was in honor of Eric Richter who celebrated his fiftieth anniversary of initiation to the practice of medicine. He began practice in Wurzburg, Bavaria, and after a tour as ship's surgeon, came to the United States.

WALLA WALLA VALLEY MEDICAL SOCIETY

Regular meeting of Walla Walla Valley Medical Society was held at the Grand Hotel, Walla Walla, February 13. Guest speaker was Fred Slyfield of Seattle who spoke on "Diseases of the Chest." The paper was followed by a lively and valuable discussion.

YAKIMA COUNTY MEDICAL SOCIETY

Yakima Medical Society held its regular meeting in Yakima, February 10. Guest speaker was Howard C. Stearns of Portland. His paper was on "Pelvic Endometriosis, Its Diagnosis and Management." It was illustrated with lantern slides and a number of case histories were cited. At the business meeting which followed, J. E. Bittner Sr. of Moxee was presented with a certificate of honorary membership in the Washington State Medical Association, having practiced more than thirty years in the state.

WOMAN'S AUXILIARY

Chelan County Auxiliary, under the leadership of Mrs. Frank Culp, has been meeting regularly. Mrs. George Hoxsey, state auxiliary president, a member of this auxiliary, was guest of honor at the first meeting in October at the Cascadian Hotel in Wenatchee. Fourteen members were present and heard D. W. Jones and Harry Wall give short talks on legislation. Plans for the year's work were discussed and it was voted to make Red Cross work one of the main projects of the year. In December the auxiliary met with Mrs. Ted Abraham and the members did Red Cross sewing. It was reported that *Hygeia* had been placed in the schools, library and the Y. M. C. A.

Whatcom County Auxiliary has been busy with Red Cross knitting and surgical dressings. The December meeting was a joint dinner with members of the Whatcom County Medical Society at the home of Dr. and Mrs. F. C. Rykken. Dancing and cards followed dinner.

Grays Harbor Auxiliary gathered in Aberdeen at the home of the president, Mrs. A. Skaperud, for an evening party in October for the first meeting of the auxiliary. Moving pictures of the vacation trips of several members were shown and later the doctors of Grays Harbor Medical Society joined them for a social hour and refreshments. For the November meeting. Mrs. M. F. Fuller was hostess to the auxiliary. Jams, jellies and magazines were donated to the Oakhurst Sanatorium by the members. In January, Mrs. B. O. Swinehart of Aberdeen entertained the Auxiliary with fourteen members present from Elma, Aberdeen and Hoquiam.

Clark County Auxiliary heard a book review of R. C. Hutchinson's "Fire and the Wood" given by Mrs. Robert O. Luehrs at the January meeting. A paper on Cancer Control was read by Mrs. J. Brougher. Mrs. Harry Wiswall reported 46 subscriptions to *Hygeia*. Following the business meeting the 12 members present made Red Cross bandages.

Mrs. George J. Vandenberg,
State Auxiliary Publicity Chairman.

IDAHO STATE MEDICAL ASSOCIATION

FORTY-NINTH ANNUAL MEETING, SUN VALLEY, JUNE 18-21.

BILLS BEFORE THE LEGISLATURE

To the date of this writing the following bills have been presented before the Idaho legislature which have a bearing on the practice of medicine. Further information concerning these and other medical matters will be published in next month's issue.

House Bill No. 124 amends Sections 53-801 et seq., as to the licensing and regulation of Chiropody especially as to surgical treatment. According to the old law they could not give local anesthetics or cut through the skin without breaking the law. They are also asking for representation on the State Board of Examiners. In the past examinations have been given by three physicians and they wish one chiropodist added to the board.

House Bill No. 117 gives hospitals liens on recoveries in causes of actions for damages accruing to patients who are treated for the injuries that give rise to the cause of action.

Senate Bill No. 48 repeals Chapter 161, Session Laws 1939, Occupational Disease Compensation.

Senate Bill No. 22, an Act to regulate the practice of Naturopathy, to license same and to create a board of Examiners. This bill was defeated February 10 by a vote of 40 to 4.

Senate Bill No. 41, an Act which would allow osteopaths to practice surgery and to use antiseptics, anesthetics, narcotics, and biologics. This bill was defeated by vote of 28 to 12.

MEDICAL NOTES

County Physician Urges Changes. W. R. West of Bonner County made recommendations for expansion of public health work for the care of indigent or semiindigent patients in the county. Among his suggestions were: (1) Hire and pay a physician to make county work his most important job. (2) Give him the authority to enforce what medical provisions he deems necessary. (3) Allow him enough help that his time and mind need not be distracted by the details of the work so that he may give adequate time and attention to the really serious problems. (4) Approve the suggestions for the purchase of the Spencer

Hospital as a combined county hospital and county clinic, providing it may be purchased on reasonable terms. (5) A separate office should be mantained for the county indigents.

Hospital Requested. Residents of Madison County presented a request bearing 1,338 signatures for a county hospital. The move was sponsored by the Rexburg Lions Club and a citizen's hospital committee.

Polio Hospital Considered. Governor Chase A. Clark called a conference of governors at Pocatello, February 10. Governors, or their representatives, from Idaho, Wyoming, Nevada, Montana, Washington and Oregon were present to discuss development of a proposed infantile paralysis center. It is anticipated that funds from the national infantile paralysis campaign may be secured to aid in construction of a 100-bed hospital.

New Hospital for Idaho Falls. Sisters of the Franciscan Order have agreed to establish a hospital at Idaho Falls. It is felt there is a need for additional hospital facilities in spite of the fact that there is one hospital active at present. The Spencer Hospital was recently closed.

County Patients On Contract Basis. W. F. Robertson of Orofino presented low bid to the county commissioners of Clearwater County for care of county patients. Furnished will be medical services including surgery, medicine, supplies of all kinds, hospitalization, nursing services, X-ray and other services.

Physician Honored. Eugene Schreiber of Caldwell was recently elected president of Caldwell Chamber of Commerce.

Location. Clifford Rigby of Rexburg has moved to Rigby to practice. F. T. Mitchell of Blackfoot has joined the medical staff of the State Hospital, South.

Wedding. Miss Willadene Berberet of Spokane and Lewis Hunt of Wallace were married February 8, in Spokane.

Upper Snake River Society, at a meeting in January, elected the following officers: president, R. R. Merrell of St. Anthony; secretary-treasurer, E. L. Soule of St. Anthony; delegates to annual state meeting, Parley Nelson of Rexburg and T. A. Ellison of St. Anthony.

SOCIETY MEETINGS

KOOTENAI COUNTY MEDICAL SOCIETY

Kootenai County Medical Society held its annual meeting at Coeur d'Alene, February 3. The following officers were elected for the ensuing year: president, John T. Wood; vice-president, H. H. Greenwood; secretary-treasurer, Alexander Barclay, Jr., all of Coeur d'Alene. To Board of Censors, term 1944, C. H. Robins, St. Maries; Delegate to annual state meeting, Alexander Barclay, Jr.; alternate, Fred Horning, both of Coeur d'Alene.

Marion J. Kerns recently moved from Clark County to Malad.

BOOK REVIEWS

A Textbook of Clinical Neurology. By J. M. Nielson, Associate Clinical Professor of Medicine (Neurology), University of Southern California, etc. With 179 Illustrations. 672 pp. $6.50. Paul B. Hoeber, Inc. Medical Book Department of Harper & Brothers. New York, 1941.

Since the birth of neurology as a specialty almost a century ago, the subject has grown beyond the capacity of any one human mind. The author has not attempted to cover the whole subject but presents a simple, practical text that includes all conditions likely to occur in the practice of the average doctor. The text is refreshing in that it is obviously written out of the extensive experience of the author at Los Angeles County Hospital, carefully checked by excellent neuropathologic studies of Courville. There is none of the endless reproduction of material from one antecedent text to another. The description and treatment of various neurologic diseases is especially apropos for physicians of this part of the country, for the author's experience is essentially that of our own. Too often foreign authors' experiences do not check too closely with ours. The section on cerebral localization, especially that on cerebral vascular disorders, is unusually fine, as this is a field of special interest to the author. This book can unreservedly be recommended as a satisfactory text on neurology.

Fred Lemere.

How To Prevent Goiter. By Israel Bram, M.D., Medical Director, Bram Institute for Goiter and Other Glandular Disease, etc. 182 pp., $2.00. E. P. Dutton & Co., Inc., New York, 1941.

This book is written chiefly for the education of the public and its terms can well be understood by the average lay reader. The author carefully states that the value of his book is a cooperative spirit with physician and those who have thyroid disturbance, and is not offered as a substitute for the physician.

He estimates that about 6,000,000 people in the United States have goiters in varying degrees, more prevalent in the goiter belts. He believes that laws governing normal health are practically identical with those that prevent thyroid derangement. Some of the more important rules for the prevention of goiter are listed.

He maintains that in exophthalmic goiter the gland is swollen because of increased blood supply and states it is just as irrational to look upon this as a disease of the thyroid gland simply because the organ happens to be enlarged, as it would be to consider typhoid fever a disease of the spleen because it happens to be swollen. However, he does not state that clinical symptoms of exophthalmic goiter disappear following thyroidectomy, and typhoid would continue its course, even if a splenectomy were done. All and all the book is excellent for what it was intended, a book for laymen. A. J. Bowles.

The American College of Physicians, Its First Quarter Century. Historian, William Gerry Morgan, M.D., LL.D., Sc.D., M.A.C.P. 275 pp., $2. American College of Physicians, Philadelphia, 1940.

This book should be of interest to all members of the American College of Physicians. When an organization has had a valuable and interesting existence for twenty-five years, it has something of value to present. The author of this historical review has been a member during almost its entire period of existence, having apparently filled all available offices. Part One features founding of the college, its

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S.M.A. CORPORATION · 8100 McCORMICK BOULEVARD · CHICAGO, ILLINOIS officials, constitution and by-laws, its publications and personal recollections. Part Two, including about half of the volume, is devoted to chronology, in which the events of each year are listed seriatim. With the passing years these annual reports increased in volume, including reports of meetings with their manifold transactions and many matters of interest that have occurred in the lifespan of such an organization. This volume will be welcomed by all who wish to keep posted concerning the functions of this comprehensive medical institution.

PLAGUE ON US. By Geddes Smith. 365 pp., $3. The Commonwealth Fund, New York; Oxford University Press, London, 1941.

The author states that nothing in this book is original, but accumulated from various sources, at the end of each chapter references being listed. It is written in a fascinating style, describing many past epidemics, some extending to earlier centuries. Among the latter is the chapter on Pestilence Describing Black Death, English Sweat, The Poore's Plague, Yellow Fever and Cholera.

The author mentions the fact that discovery of the cause of an epidemic often demands the sort of detective work exhibited in tracing a murderer. There are presented in detail some of these detective stories. For instance, The Case of the Methodist Ladies, The Case of the Ladylike Oysters, The Case of the Sleepy Lobsters. These and other disclosures are as interesting as any detective stories, and deal with actual occurrences. A book of this style describes carefully to the reader the permanent role of health officers in maintaining the lives and comfort of citizens.

FRACTURES AND DISLOCATIONS FOR PRACTITIONERS. By Edwin O. Geckler, M.D., Fellow of the American Academy of Orthopedic Surgeons, etc. Second Edition, 314 pp., $4. The Williams & Wilkins Co., Baltimore, 1940.

The majority of space in this book is given to mechanics of the production of various types of fractures, discussion of usual complications, principles of treatment, including mechanics of reduction of the different types of fractures, and a concise description of one or two methods for treatment of each specific fracture. The first six chapters describe anatomy, pathology and physiology relating to fractures, routine admission care of injured persons, emergency treatment, general methods for treatment with description of apparatus necessary and followup treatment.

Individual chapters take up fractures of various regions of various bones. Particular stress is laid on physical examination and signs. Illustrations are numerous and well chosen. The book is an exceptionally clear manual for care of fractures and almost every type is described.

J. J. TUELL

THE PHARMACOLOGICAL BASIS OF THERAPEUTICS. A Textbook of Pharmacology, Toxicology, and Therapeutics for Physicians and Medical Students. By Louis Goodman, M.A., M.D., Assistant Professor of Pharmacology and Toxicology, Yale University, School of Medicine, and Alfred Gilman, Ph.D., Assistant Professor of Pharmacology and Toxicology, Yale University, School of Medicine. pp. 1383. $12.50. The Macmillan Company, New York, 1941.

This book is full of accurate information of clinical importance and is written in such simple and direct style that it is pleasurable as well as informative reading. One might almost say that there is never a dull moment. To the reviewer's knowledge this is the first pharmacology that has emphasized sufficiently the clinical application of this science. Certainly the subject of pharmacology has needed renovation and the authors have given life to their subject. Physicians will find this book a storehouse of knowledge in which the therapeutic application of pharmacodynamics is emphasized. Students who study it will feel the relation of a preclinical subject, too frequently isolated, to the actual practice of medicine. The authors are to be congratulated.

C. P. WILSON

BIOLOGICAL ASPECTS OF INFECTIOUS DISEASES. By F. M. Burnet, M.D., Assistant Director, Walter and Eliza Hall Institute, Melbourne. 310 pp., $3.75. The Macmillan Company, New York; The University Press, Cambridge, England, 1940.

While the study of infectious diseases has mainly been the work of medical men or bacteriologists, the author believes the viewpoint of the biologist presents an interesting field of investigation. He thinks the biological approach may be a better standpoint for study of human infectious diseases than a purely medical one. After discussing evolution of infection and defense, the aggressors are divided into bacteria, protozoa and viruses, each of which is considered with reference to human infection. How infections are spread, with description of their transfer, is illustrated by specific incidents. Attention is called to "new" diseases, reference being to those whoch have become epidemic in the past fifty years. Included are poliomyelitis, encephalitis lethargica and others which have bulked largely in this period. This may be due in part to the expansion of diagnoses and their recognition. The author thinks it is alarming that most of these have been infections of brain or spinal cord. This book offers interesting viewpoints of this class of diseases.

MANUAL OF PHYSICAL DIAGNOSIS, with Special Consideration of the Heart and Lungs. By Maurice Lewison, M.D., Professor of Physical Diagnosis, University of Illinois College of Medicine, and Ellis B. Freilich, M.D., Associate Professor of Medicine, University of Illinois College of Medicine, etc., In Collaboration with George C. Coe, M.D., Instructor of Medicine, University of Illinois College of Medicine, etc. 317 pp., $3. The Year Book Publishers, Inc., Chicago, 1941.

Special emphasis in this book is directed toward principles of physical examination of heart and lungs, being the organs that can only be examined indirectly. The authors think that in recent years undue emphasis has been placed on laboratory, roentgen and other supplementary methods of examination, with more or less suppression of fundamental facts of physical examination. While instruments of precision are of valuable assistance, the maxim of our medical forefathers is still effective that "the whole art of medicine is in observation." This book is presented with these principles as a text. One section deals with the respiratory system, one with the cardiovascular system, another with abdomen, genitalia, extremities and reflexes. Throughout the book special attention is called to vital points of examination which help the observer to reach accurate diagnosis. There is little discussion of theories, essential facts being emphasized. The book can be commended to student and practitioner.

NORTHWEST MEDICINE

THE JOURNAL OF THE STATE MEDICAL ASSOCIATIONS OF OREGON, WASHINGTON, IDAHO

ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION

Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879. Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 3, 1917, authorized July 31, 1918.

Vol. 40, No. 4 APRIL, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Reprints will be furnished by the printer according to the schedule of prices which accompanies the galley proofs submitted to the author. The order for reprints should accompany the returned galley proofs. The printer holds the type until the first of the following month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

STATE MEDICINE FOR OLD AGE PENSIONERS

In a recent issue of this journal there was published a dicussion of the initiative bill presented to the voters of Washington and later approved by them at the fall election, known as "The Senior Citizens Grant Act," commonly referred to as the Old Age Pension System, and the question was raised whether this would be a step toward establishment of state medicine. This provides for a monthly payment of forty dollars to citizens of the state who have attained sixty-five years of age, whose financial status will meet the requirements of the act. Half of these payments will be provided by the federal government. While the number of prospective pensioners is unknown, it is estimated that 60,000 will be eligible when the act begins to function April 1, with the prospect that this number will be very greatly increased in a short period of time. It is probable that it will be necessary to raise some thirty-four millions of dollars annually to meet the state's share of these participants. While legislation has set up an increased sales tax and other special taxes, actual experience alone can determine whether sufficient funds will be accumulated to meet the requirements of this new venture.

One section of this initiative act provides that the state shall furnish medical and dental care to these pensioners, limited, however, to office and home service, hospitalization being otherwise provided for. The act permits free choice of medical and dental attendance by physician, dentist, osteopath, chiropractor and chiropodist, the optometrist and drugless healer being excluded. Medical attention will be supervised by existing county medical service bureaus, thus obviating the confusion of a new setup for this line of practice. Legislative provision has set aside a definite sum to be applied to payment of medical and dental bills. Rules and regulations controlling this form of practice will be found in detail on page 151 of this issue.

It is understood that this form of practice is optional with members of the medical profession, there being no compulsion requiring anyone to participate unless he so chooses. It is also noted that this is distinctly a form of socialized medicine which has been established for the benefit of recipients of old age assistance in the State of Washington. It is stated that this is the first instance of a state providing free medical service for old age pensioners, though in others such pensions have been established. This may be a bitter pill, but those so inclined will be obliged to swallow it.

MICROFILM SERVICE

When one is engaged in research work, or writing a paper, often he desires access to a medical journal or book which is not available in his locality. Perhaps it may be obtained by borrowing from a library in a distant state, although this is frequently not feasible for many well understood reasons. At present, arrangements have been made by which one may secure copies of any desired publication from a book or a journal. Everyone should be in possesion of this information as to means of securing desired material.

The announcement has been received from the Army Medical Library at Washington, D. C., stating that with the approval of the Surgeon General of the Army, a microfilm copying service is offered to the medical profession, by which anyone may receive copies of any medical literary material which he desires on microfilms by application to this library. In addition has been established a weekly current list of medical literature, listing 4,000 medical and related periodicals, pamphlets, reports and proceedings received at this library. In order to read these films, one must have access to a reading camera, one at least of which should be available in every large city for use not only for reading microfilms on medical subjects, but also those which are useful for other professions.

It is announced that this service will be operated on a nonprofit basis solely for making available to research workers the extensive medical literature of the Army Medical Library. The cost to the user will be for actual labor and materials required in making and distributing the microfilm copies. This is a small expenditure compared with the probable cost of borrowing books and journals, and the film remains one's personal property. After this service has become widely known and popularized it will undoubtedly be utilized extensively by research workers.

SOL BLOOM EXPOUNDS ON LONGEVITY

There are some things to be said for a scientific education. It does have its value in spite of the assertions of those who cry for a return to the study of the so-called humanities. Perhaps the fellow who is steeped in Virgil, Dante and Chaucer is a better dinner companion than the one with a splash of beef broth on his cuff. Maybe the chap who can discourse pleasantly on the compositions of Bach, Beethoven and Wagner is a greater social asset to a community than the guy with drafting ink on his finger nails. Perhaps the liberally educated individual is more pleasant, more gracious, more polished and more polite. But in the complicated and exacting business of running the world of today is he really there?

The one thing which can be said for a scientific education is that it trains the student to think. It develops his capacity for reason and deduction. The scientifically trained mind can go systematically from a given set of facts to a logical conclusion, something which does not always seem to be true of those otherwise trained.

Evidence of bizarre thinking may readily be found. The physician meets examples constantly and finds that much of his work consists in replacing fanciful assumption with reasonable deduction based on logic. Gross evidence of faulty thinking is unhappily often exhibited by those in public office. Unscientific and unsound thinking have long made government far less efficient than it might be and there is little evidence that conditions will improve in the near future. Until educators realize that true education consists in training people to think and scientific training is the best way to develop that ability, we will stumble along with leaders who are politicians, not statesmen.

Until more scientific training is incorporated in our educational program we will continue to have such evidence of strange thought processes as recently emanated from Washington, to-wit: Representative Sol Bloom of New York is one of our better known legislators. He has been in Congress for many years and holds extremely important committee positions. Yet, on the occasion of his seventy-first birthday last month, he was credited with the following statements as to the foundation of his longevity and physical prowess:

> "To hell with vitamins. Health is all a matter of circulation . . . Now about circulation, tell you what to do. When you take your shoes off at night rub your feet. Get 'em limbered up. Then rub your knees .Circulation, see? And then turn your head this way and that, easy. It's all circu-

lation. . . . And if you wear a collar button at the back, throw it away! It's bad. Presses on the neck. Prevents circulation."

And then the worthy representative from New York proceeded to demonstrate his virility and great health by proving that he could stand on one foot without putting the other one down for fifteen minutes, "and maybe more!"

PAN-AMERICAN LEAGUE AGAINST CANCER

An organization has been incorporated under the above title to carry on in the western hemisphere. The organization committee includes the names of well known and distinguished medical men from all the countries of North and South America.

It is announced that the aims of the new organization are to promote and encourage the international fight against cancer, to coordinate scientific study and research, to engage in social welfare work in relation to cancer and promote establishment of national organizations throughout the western hemisphere to engage in simimlar activities. It is proposed to publish a Pan-American cancer journal, to organize and maintain a Pan-American center of information and statistics, and establish fellowship endowments and exchange of scholars and students. As might be expected, Dr. Francis Carter Wood heads the organization committee and is one of the chief inspirations for promotion of the enterprise.

CLINICAL FORUM

It has been requested that a department of this journal be set aside for presentation and discussion of problems encountered in practice, the consideration of which may prove of profit to readers. The plan is for anyone having had a difficult or unusual case for treatment to have the opportunity for describing briefly the particular problems involved, being formulated so that the reader may assemble his views on the subject under discussion and present them for publication in a following issue if he so desires. This plan of procedure forms the basis of the "clinical forum" which it is proposed herewith to set up.

On page 156 of this issue are views on this subject from a member of the Committee on Pediatrics and Child Welfare of Washington State Medical Association. A puzzling obstetric case is described, for the relief of which the writer seeks advice. The continuance of this department will depend on the interest displayed in it as shown by participation on the part of readers of the journal.

THIS SURGICAL NUMBER

It has been customary for several years to devote one issue of this journal to publication of certain papers read before the annual meeting of Seattle Surgical Club. In this number are presented papers read before the recent meeting of the club. Aside from the paper read by the guest speaker all others were presented by members of the club. Since "brevity is the soul of wit," most of these papers possess this feature. By reason of a time limit being set for reading of each paper on the program, long papers were not presented. In past years this group of papers has been received with general approval, being based on timely subjects which are embraced in the experience of the average surgeon.

VIRUS OF NEW LUNG DISEASE FOUND BY INTERNATIONAL COOPERATION

Discussing a recent announcement that J. M. Weir, M.D. and F. L. Horsfall, M.D., of the International Health Laboratories, New York, have been able by means of research carried on in New York and the British West Indies to isolate and identify the specific virus of the new type of lung disease ksown as "acute pneumonitis," *The Journal of the American Medical Association* for March 22 says that "aside from its epidemiologic importance the work of the two men is noteworthy and may long serve as a model of speed and effectiveness in international medical research, an inspiring example of preparedness for future epidemiologic emergencies."

Epidemics of the disease, since it was first described five years ago "have been reported with increasing frequency in a half dozen American states as well as in England and France, from which it is apparent that the disease can assume pandemic (widely distributed) proportions," *The Journal* says.

It is characterized by a remarkably high sickness rate and in some institutions or localities over 50 per cent of all persons have contracted the disease. No deaths have been reported so far in uncomplicated cases.

"The apparent recent increase in the frequency of this disease and its tendency to become pandemic rendered it of sufficient importance to warrant vigorous attempts to determine the causative agent," *The Journal* says.

About a year ago Drs. Weir and Horsfall attempted to infect all of the usual laboratory animals with the disease but without success. In the hope of finding a susceptible animal, it was finally decided to try the mongoose, an animal available in abundance in the Caribbean islands but whose importation to the United States is prohibited.. By modern methods of transportation and communication, however, it was found feasible to divide the work between the New York laboratory and the British Tuberculosis Research Association at Kingston, Jamaica. Material from victims of the disease in New York was transported to Kingston and material from the mongoose was sent to New York for analysis.

"Studies of natural methods of infection have shown that the experimental virus disease in the mongoose is readily spread by contact," *The Journal* says. "The evidence therefore seems complete that the mongoose infecting virus is the cause of the current incipient pandemic of acute pneumonitis."

ORIGINAL ARTICLES

FACTORS RESPONSIBLE FOR PRESENT-DAY LOW MORTALITY IN ACUTE ILEUS*

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In no field of therapy have more striking advances been made in the past ten years than in the treatment of acute ileus. One has only to compare the mortality statistics of the decades from 1900 on to demonstrate this obvious fact. Acute obstruction has been justly considered since Listerian days a lesion amenable only to surgical therapy, and yet even in cases operated upon we find in 1886 a series of 346 cases reported by Ashhurst[1] with a mortality of 69.3 per cent. In our clinic at the Presbyterian Hospital in New York the mortality rate in the period 1916-1919 was 66 per cent. In the Grady Hospital in Atlanta, West[2] reported a mortality of 66.6 per cent in the cases of acute obstruction from 1921 to 1924. Guillaume[3] in 1922 reported a mortality of 59.7 per cent in 4,057 collected cases from different European and American clinics.

Rather suddenly in the five year period 1930-1935 a marked lowering in mortality rate was reported from several hospitals. Thus, Moss and McFetridge[4] found in a series of 340 cases at the Charity Hospital in New Orleans in the period 1930-1934 a mortality of 31.7 per cent as compared to 60.9 per cent in a series of 343 cases from the same hospital reported by Miller[5] in 1929. Van Beuren and Smith[6] found that the mortality for acute ileus at the Presbyterian Hospital had dropped from the above quoted figure of 66 per cent to 28.4 per cent for the period 1932-1935.

An improvement, equally striking, has been reported in the past two years from a number of clinics. Thus, Johnston[7] states that in their 54 cases of acute obstruction the mortality has been reduced to 9.3 per cent. Table I[8], a summary of our 311 cases of acute ileus, shows a mortality of 13.5 per cent and in 248 cases successfully intubated with the Miller-Abbott tube there were only twenty-four deaths or a mortality of 9.7 per cent.

With such amazing lowering of mortality rates in the early years of the last decade and still further improvement in the last two years, there must be clear-cut reasons for this decrease in deaths in treatment of acute ileus. There are definite reasons and yet they are not sufficiently appreciated by many physicians who first see these cases or the surgeons who treat them. My one purpose in presenting this subject is to emphasize the factors that have resulted in such remarkable improvement in the treatment of this everominous intestinal obstruction.

Prior to 1930 it was the rule in the majority of hospitals to operate upon cases of acute ileus as soon as they were admitted to the hospital; in fact, they were usually sent immediately from the ambulance or emergency ward to the operating room. The diagnosis was usually obvious because of obstipation, distention and fecaloid vomiting. It was so well recognized that the earlier these patients were operated upon after the onset of obstruction the better the prognosis, that any delay was deprecated by the surgeon.

The majority of these patients had been vomiting for hours, they were dehydrated, had a hypochloremia and were in severe shock in many instances. If fluid was given, it was usually in the form of glucose solution. The majority of these patients promptly died in shock and hypochloremia, even though the obstruction had been relieved.

Total Cases	311
Deaths	42
Mortality, per cent	13.5
Cases successfully intubated	248
Deaths	24
Mortality, per cent	9.7
Tube did not pass beyond pylorus in	72
Gastric suction efficient in	39
Poor management in	18
Failure with repeated effort in	15

In 33 cases with failure to pass the tube, there were 18 deaths, or 54 per cent.

Table 1. Summary of cases treated with Miller-Abbott Tube.

As early as 1912 Hartwell and Hoguet[9] had demonstrated that salt solution given by hypodermoclysis doubled the survival period in acute obstruction in experimental animals, but it was not until

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*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

[1] Ashhurst, J.: Internat. Encycl. of Surg., Vol. VI, 1886.

[2] West, P. W.: J. Med. Assoc. of Georgia, 14:192, 1925.

[3] Guillaume, A. C.: Les Occlusions aignes et subaignes de l'intestin. Masson et Cie, Paris, 1922.

[4] Moss, W. and McFetridge, E. M.: Acute Intestinal Obstruction. Ann. Surg., 100:158-166, July, 1934.

[5] Miller, C. J.: Study of 343 Surgical Cases of Intestinal Obstruction. Ann. Surg., 89:91-107, Jan., 1929.

[6] Van Beuren, F. T., Jr. and Smith, B. C.: Mortality in Acute Ileus. Ann. Surg., 106:752-755, Oct., 1937.

[7] Johnston, C. G., Penberthy, G. C., Noer, R. J. and Kenning, J. C.: Decompression of Small Intestine in Treatment of Intestinal Obstruction. J.A.M.A., 111:1365-1368, Oct. 8, 1938.

[8] Whipple, A. O. and Nelson, J. A.: End Results of Decompression of Intestinal Tract with and without Operation. Paper presented at the Bicentennial Celebration, University of Pennsylvania, September 19, 1940 (in press).

[9] Hartwell, J. A. and Hoguet, J. P.: Experimental Intestinal Obstruction in Dogs as to Cause of Death and Treatment by Large Amounts of Normal Saline Solution. J.A.M.A., 59:82-85, July 13, 1912.

Haden and Orr[10] called the attention of the profession to the need of sodium and chloride replacement with salt solution and the demonstration by Gamble and Ross,[11] McIver and Gamble[12] and Atchley and Benedict[13] of the essential balance of water and electrolyte in the body cells, the interstitial fluid and blood, that the effect of vomiting and dehydration began to be appreciated in the condition of the patient with intestinal obstruction.

Since 1930 the reduction in mortality from 60 to 30 per cent in many clinics is due primarily to the recognition of the necessity of restoring electrolyte and fluid balance before operation in the dehydrated and shocked cases of acute ileus. But in many hospitals 10 per cent glucose solution is still given instead of normal salt solution. Glucose solution does nothing more than draw more of the interstitial fluid into the circulation and intensifies the hypochloremia.

The simplification of bedside and laboratory methods of determining the salt and fluid needs in these patients has been another factor in reducing the mortality in acute ileus. Scudder and Drew, recently residents on our surgical service, have simplified the hematocrit, the blood and plasma specific gravity and the serum protein determinations, all of which are essential in determining the degree of shock and the salt and fluid imbalance. We have used these methods in many hundreds of cases on our surgical service and find them invaluable, not only for acute ileus, but in cases of burns, hemorrhage, sepsis and depleted states, for they tell us not only the fluid and salt needs but prevent our overtreating the patients with salt or fluids.

The subject of this discussion and the time at my disposal do not permit of any detailed description of the method or simple apparatus used, but those interested are referred to Drew and Scudder's recent paper[14] on controlled fluid and electrolyte therapy. Figure 1 shows normal values for hematocrit, specific gravity and protein in the blood and plasma. I quote from Drew's and Scudder's paper:

"In the study of our preoperative and postoperative patients certain well-defined patterns have recurred so many times and have proven so valuable in determining salt and fluid therapy that we present them briefly. In Fig. 1 are shown these typical hematocrit-protein patterns.

"In *simple dehydration* (fig. 1, col. 1), whether from lack of fluid intake, diarrhea, excessive sweating, severe vomiting, or shock of a psychogenic, traumatic, or postoperative origin uncomplicated by hemorrhage, there is a rise in the cell volume, the whole blood and plasma specific gravity and the plasma protein percentage. In the first three of these conditions, treatment consists in administering fluids until these elevated values tend to approach normal. In shock, however, the mechanism is more complicated; hence treatment, to be rational, must attempt to overcome: first, the severe arteriolar and venular spasm; second, the capillary paralysis and dilatation, and, third, the great loss of circulating blood volume.

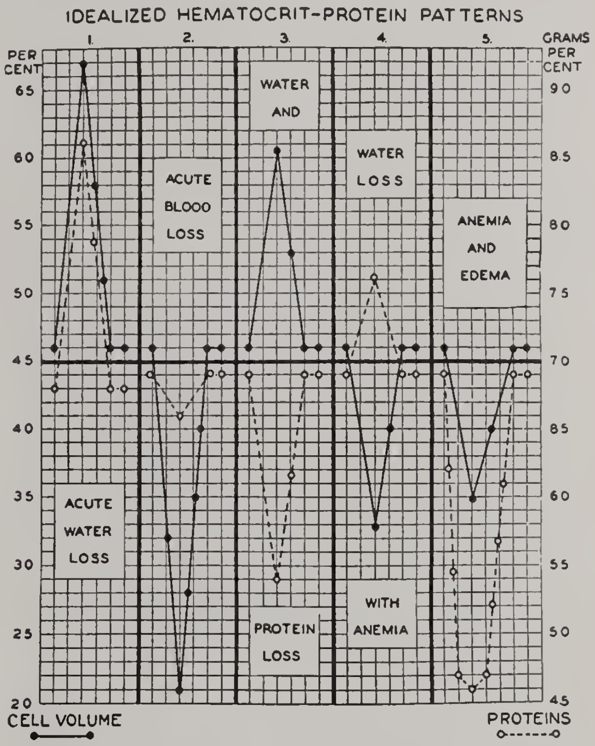

Fig. 1. These patterns represent idealized, superimposed, graphic histories of the changes in cell volumes and plasma protein determinations on several cases of each type with the time element eliminated for the sake of brevity in comparative representations. Each curve begins at a hematocrit reading just above the normal heavy black line; the proteins just below the line and each returns to the beginning position.

Column 1. Acute water loss. Here there is marked hemoconcentration and dehydration as indicated by the rise in both cell volume and protein level. Such a pattern is typical of conditions in which there is excessive vomiting, severe diarrhea, diminished fluid intake, or uncomplicated shock.

Column 2. Acute blood loss. Hemorrhage gives a picture of steadily falling hematocrit reading and moderate protein loss.

Column 3. Water and protein loss. This is the picture so characteristic of severe burns, to a slightly less dgree in ruptured peptic ulcers, ruptured appendices with peritonitis, and persistent fistulas from the bowel.

Column 4. Water loss with anemia. Relative hyperproteinemia in the presence of secondary anemia of chronic illness is a fairly reliable index of the degree of dehydration.

Column 5. Anemia and edema. All values are below the normal line. When proteins reach a concentration of less than 5.5 grams per cent functional disturbances related to the water content of the tissue may be expected; when below 5.0, true edema usually supervenes.

"Hypertonic sodium chloride is particularly effective in relieving this arteriolar spasm, in decreasing the viscosity of the blood, and in aiding the return of fluid from the tissues into circulation. It should be used cautiously in collapse due to dehydration. Suprarenal cortical hormone (eschatin) has proved valuable in restoring capillary tone, raising the blood pressure, and redistributing electrolytes. To maintain any gain initiated by the sodium chloride and eschatin therapy, blood transfusions are given as dictated by the findings on repeated blood studies.

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[11] Gamble, J. L. and Ross, S. G.: Factors in Dehydration Following Pyloric Obstruction. Clin. Investigation, 1: 403-423, June, 1925.

[12] McIver, M. A. and Gamble, J. L.: Body Fluid Changes Due to Upper Intestinal Obstruction. J.A.M.A., 91:1589-1592, Nov. 24, 1928.

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[14] Drew, C. R., Scudder, J. and Papps, J.: Controlled Fluid Therapy. Surg. Gynec. & Obst., 70:859-867, May, 1940.

"In *hemorrhage* (fig. 1, col. 2), either obvious or concealed, there is an immediate fall in the specific gravity of the whole blood and a drop in the cell volume as determined by the hematocrit. The plasma specific gravity changes are less marked. Even in severe hemorrhage, these values may not be abnormal, due to readjustments of plasma proteins and circulating volume. They do not approach the percentage loss of cellular elements as indicated by the fall in whole blood specific gravity and the hematocrit.

"Treatment here consists of restoring blood volume by transfusions. It is of utmost importance in cases of shock when the patient is unconscious to determine whether that shock is complicated by hemorrhage or not. These simple tests can make this differentiation in the vast majority of cases.

"When there is not only *loss of fluid but loss of protein* as well (fig. 1, col. 3), there is a tendency for the hemotocrit curve to rise, while the protein values continue to fall. Such patterns are typical of severe burns, ruptured peptic ulcers with peritonitis, and even ruptured appendices with large abscess formation as the result of a great pouring out into the peritoneal cavity of an exudate rich in protein. In these cases the problem of water balance is doubly hard. The extreme hemoconcentration and shock, if present, must be combated by means of adequate fluid administration; yet, the already lowered protein concentration must not be reduced to the edema level which in most patients is reached at about 5 grams per 100 cubic centimeters of plasma. Ravdin and his colleagues have laid great stress on the part that such hypoproteinemia plays in the malfunctioning of tissues and organs, particularly after traumatic or operative insult.

"*When acute changes take place in chronic disease* (fig. 1, col. 4), in which there already exists an anemia and probably a hypoproteinemia, any one of the ordinary tests, i.e., red cell count, hemoglobin and hematocrit determination, will not evaluate the true state of dehydration. A combination of all these tests is necessary, in particular, the determination of plasma specific gravity. A sudden water loss is reflected by an increase in the weight of plasma before other changes become apparent. This resultant hyperproteinemia is relative. Treatment consists in reducing the protein values to approximately normal levels and then restoring the cellular elements of the blood by appropriate means.

"*Impending edema* (fig. 1, col. 5), may be suspected by a gradually falling plasma protein level. Such water logging of tissues is detrimental in any surgical condition. In severe burns local edema causes an early creeping of the tan, allowing infection at its periphery. In postoperative resections or anastomoses, the stomas become swollen and obstructed, the motility of the gut is lessened, and the tendency for ileus increases. A definite relationship exists between the water content of tissues and the healing of wounds, particularly in those cases in which catgut has been used as the suture material and its tensile strength is affected. Repeated determinations of the plasma protein content by an easy but accurate method assist in the prevention of such complications."

Another very important factor in the lowering of mortality in acute ileus during the 1930-1935 period was the contribution of roentgenology to the earlier recognition and diagnosis of acute obstruction in doubtful or suspected cases. In 1910 Case began his pioneer work in roentgen diagnosis of acute obstruction, and in 1911 Schwartz[15] published a paper on the subject. But it was not until 1927 that Case[16] published his convincing and outstanding paper which focused the attention of the clinicians on the roentgen findings in early stages of acute obstruction and described the herring-bone and stepladder patterns now so well recognized.

Wangensteen and Lynch[17] in 1930 first demonstrated the roentgenologic findings in experimental ileus. Swenson and Hibbard[18] in 1932 published from our hospital convincing evidence of the value of roentgen studies in the recognition of acute ileus in the early stages. As a result of early diagnosis in many clinics using the roentgen-ray, patients were operated upon earlier as soon as their fluid and electrolyte balance had been restored. It is now well recognized that patients coming into the hospital with an acute upper abdomen should have an immediate three position film taken of the abdomen to determine the presence of air under the diphragm in case of perforated ulcer, of fluid levels and ladder pattern in the intestine in case of acute obstruction.

The third period of improvement in the therapy of intestinal obstruction is of recent date and has to do primarily with decompression of the distended intestine, proximal to the obstruction, by means of intestinal intubation. Failure to recognize the importance of intestinal distention in the syndrome of acute ileus and in its production of some of the most serious lesions associated with the obstructive factor accounts for a great deal of the mortality in acute obstruction and in peritonitis that still continues high in many hospitals.

During the past ten years, as a result of the work of Wangensteen[19] among others, ample clinical and experimental proof has accumulated to show that even in the presence of complete obstruction, symptoms of shock and toxemia do not appear, if distention is relieved and controlled, if fluid and electrolyte balance is restored and if the blood supply to the obstructed bowel is not compromised. The present-day rationale of treating acute ileus is a conservative decompression, as long as there is no evidence of strangulation. And in the doubtful or suspected case of strangulation it is still essential to precede the operation with restoration of salt and water balance and the initiation of intestinal intubation, while the patient is being prepared for the operation.

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15. Schwartz, G.: Wein, Klin. Wchnschr., 24:1386, 1911.
16. Case, J. T.: Roentgenological Aid in Diagnosis of Ileus. Am. J. Roentgenol., 19:413-425, May, 1928.
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18. Swenson, P. C. and Hibbard, J. S.: Roentgenographic Manifestations of Intestinal Obstruction. Arch. Surg., 25:578-600, Sept., 1932.
19. Wangensteen, O. H.: The Therapeutic Problem in Bowel Obstructions. C. C. Thomas, Springfield, Ill., 1937.

At this point it is important to discuss the evidence that points to an interference with the blood supply of an obstructed loop of the bowel. Fear of strangulation, which is a valid one, has deterred too many surgeons from using intestinal intubation on the one hand and on the other the failure to recognize strangulation has resulted in disaster in case of physicians and surgeons intubating patients with acute ileus. It is obvious that great care and discrimination must be used in selecting cases for intubation. Operation should be done in all cases, after restoration of fluid and salt balance, that give (1) a history of a sudden onset of pain which persists between crampy exacerbations; (2) where localized tenderness is elicited or a tender mass is palpable; (3) where the white blood count remains elevated and where the pulse rate remains increased after fluid balance is restored; (4) in the few cases where the diagnosis by physical and roentgen-ray examinations remains doubtful or other lesions are suspected. It must be remembered that gangrene is associated with acute ileus in only about 10 per cent of the cases. Except in suspected strangulation, cases with acute ileus, mechanical or paralytic, should have the combined treatment of restoration and maintenance of fluid and salt balance and intestinal intubation, for it is this combination that has resulted in saving about 90 per cent of the patients in hospitals where this regime is understood and intelligently followed.

The great value of emptying the stomach and duodenum by lavage and suction had been recognized since 1884, when Kussmaul and Cahn[20] first used an elastic stomach tube for aspirating purposes to reduce the intraabdominal distention. Westerman[21] in 1910, and McIver and his coworkers[22] in 1926 published convincing papers on the use of the duodenal tube for decompression of the bowel. We believe that Robertson Ward of San Francisco was the first to use and describe a method of continuous duodenal suction for the purpose of decompressing the gastrointestinal tract. In 1925 he[23] described this method. But it was Wangensteen[24] who, in his paper in 1933 and with Paine[25] in 1934, popularized the greater efficiency of continuous duodenal suction and reported low mortality in a large group of cases with acute ileus treated in this way.

In his monograph[19], published in 1937, Wangensteen recognized the limitations of continuous duodenal suction in the continuous loss of electrolytes, inability of the patient to retain nourishment by mouth and failure to deflate the bowel in paralytic ileus, where there is no peristalsis to regurgitate the fluid and gas up into the duodenum.

Previous attempts to intubate the small intestine had not been consistently successful, although as early as 1908 Scheltema[26] was able to demonstrate that a tube would pass the entire length of the intestinal tract. Certainly such atempts had not been of practical use. In 1934 Miller and Abbott[27] published their epoch-making paper on the use of the double compartment rubber tube in intestinal intubation. Devised originally as a means of intubation for physiologic research, which resulted in original contributions to our knowledge of small intestinal physiology, Abbott and Johnston[28] in 1938 adapted this tube to diagnosis and management of small intestinal obstruction and demonstrated that by this method the obvious limitations of duodenal suction could be avoided. Since then this method has been adopted with amazing success in a number of hospitals where its use is understood and controlled, but has been discarded in many others after one or two failures with unintelligent or impatient attempts to pass the tube. This method of real intestinal intubation is an outstanding example of the value of the application of physiologic research to the solution of a long-standing problem in human therapy.

Progress of the balloon tipped double tube from one distended loop to another, with emptying of the proximal loop and the resultant reestablishment of peristalsis in that segment, soon deflates the small intestine down to the point of obstruction; and because of restored peristalsis, continuous suction in the tube keeps the bowel empty. The great advantage of this method over duodenal drainage is that the segments of bowel proximal to the obstruction do not remain as distended motionless loops but are kept collapsed, vascularized and functioning, both in peristaltic activity and absorptive ability, making it possible for the patient to take fluids and food until the obstruction is relieved. In cases of paralytic ileus and in inflammatory mechanical ileus the

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20. Kussmaul, and Cahn, A.: Berl. Klin. Wchnschr., 21:669, 1884.
21. Westerman, C. W. J.: Zentralbl. f. Chir., 37:36, 1910.
22. McIver, M. A., Benedict, E. B. and Cline, J. W. Jr.: Postoperative Gaseous Distention of Intestine. Arch. Surg., 13:588-604, Oct., 1926.
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26. Scheltema, G.: Arch. Roent. Ray., 13:144, 1908-1909.
27. Miller, T. G. and Abbott, W. O.: Intestinal Intubation. Am. J. M. Sc., 187:595-599, 1934.
28. Abbott, W. O. and Johnston, C. G.: Intubation Studies of Human Small Intestine. Surg. Gynec. & Obst., 66:691-697, April, 1938.

majority of the patients are saved an enterostomy or an operation to relieve the obstruction because of the decompression of the bowel and the maintenance of food, fluid and protein requirements, until the obstruction is spontaneously relieved.

Intestinal intubation has been a great boon to the roentgenologist as well as the surgeon, in the diagnosis of small intestinal lesions. Because of the overlapping coils of jejunum and ileum, barium studies of the small intestine have been exceedingly difficult to interpret. In cases of intestinal obstruction administration of a regular barium meal has been positively harmful. Now the deflation of the obstructed bowel can be observed under the fluoroscope and with the metal tip of the deflating tube at the point of obstruction a small amount of a thin barium suspension injected through the feeding compartment identifies the level of obstruction and defines the character of the lesion, intrinsic or extrinsic.

We have also used the tube to determine the site and level in the bowel of cryptic bleeding and in several cases have been able to make the diagnosis of intussusception and chronic volvulus by use of the tube in conjunction with roentgen-ray studies. Our radiologists are as enthusiastic as our surgeons in the use of intestinal intubation and are constantly cooperating with us in the everwidening scope of this new method in diagnosis and therapy.

We have found the tube a preoperative measure of the greatest value as a guide to the point of obstruction at time of operation, and as a means of equalizing the size and lumen of the bowel proximal and distal to the obstruction. The advantages of intestinal intubation before intestinal resection as a means of preventing postoperative distention and tension on the suture line cannot be overemphasized; for it is tension on the suture line that causes tissue necrosis, ischemia and leakage with peritonitis or fistula formation. The smooth convalescence in resections of the small bowel and right-sided colectomies with ileocolostomy, where the tube has been used before and after operation to maintain a deflated vascularized bowel in the area of anastomosis, is illustrated in our comparative figures. The main arguments in favor of a two stage operation in right-sided colectomy were based on the dangers of leakage from an ileocolostomy in the presence of a distended ileum. With the maintenance of deflation before and after resection, the one stage operation is now a safer procedure because it eliminates the danger of two anesthesias and two operations and the difficulties of the second operation in the presence of inflammatory adhesions.

We have found intestinal intubation of great value in dealing with the paralytic and later inflammatory ileus usually associated with a diffuse peritonitis. Loss of serum protein in severe peritonitis results in severe edema of the bowel wall and loss of peristalsis. Intubation not only decompresses the distended bowel but it makes it possible to feed the patient easily assimilated protein in the form of split proteins and amino acids through the tube, as well as easily digested food by mouth. We have been able to save patients with true generalized peritonitis by this means who formerly invariably died of paralytic and mechanical ileus and inanition.

Time and the purpose of this paper do not permit going into the detailed technic of the management of intubation. Those interested are referred to the paper of our former residents, Octa C. Leigh, Jr. and John A. Nelson[29]. But there are some points which cannot be overemphasized in the clinical application of intestinal intubation. Some of these have to do with success of the method and others with contraindications and dangers which may result with careless use of the tube.

If intubation is to be successfully carried out on a surgical service, it must be done by some member or members of the staff trained in the method and familiar with indications for and against its use. Before we began intubation in our clinic we sent Dr. Leigh, who was then our senior resident, to observe Dr. Abbott's patients and his technic with the tube. Dr. Nelson followed him and now one of our graduate nurses, trained in the use and care of the tubes, sees all the intubated cases with one of our residents. Furthermore, the attending staff has to become familiar with the method and has to learn patience with experience in the use of the tube, and not to expect results within an hour after intubation is begun. A lack of understanding and cooperation on the part of the attending surgeons has been responsible for discarding the method in hospitals after two or three haphazard, unintelligent attempts at passing the tube.

A surgeon and nurse trained in the technic of intubation will prevent mistakes and dangers in use of the tube. The two compartments of the tube should always be clearly marked, and strict orders should be left to inject nothing but air and never more than 20 cc. into the balloon after it has passed the duodenum. Overdistention will either burst the balloon or cause pressure necrosis on the bowel wall. We have heard of one case in a neighboring hospital, where barium was injected into the balloon by mistake. The barium could not be removed and in attempting to withdraw the tube and balloon, multiple reverse intussusceptions were caused, followed by perforations and fatal peritonitis. The tube should never be withdrawn until the balloon is deflated.

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[29] Leigh, O. C. Jr., Nelson, J. A. and Swenson, P. C.: Miller-Abbott Tube as Adjunct to Surgery of Small Intestinal Obstructions. Ann. Surg., 111:186-212, Feb., 1940.

A danger, fortunately seldom noted, is ulceration and hemorrhage in the esophagus in comatose patients. Swallowing movements and change in position of the tube prevent this happening in conscious cooperative patients. The tube, obviously, should not be used in cases with peptic ulcer or esophageal varices. It should not be used in patients with obstruction of the colon with the idea of decompressing the colon. The ileocecal valve prevents this. In such cases cecostomy or colostomy is indicated. It should not be used except as a means of emptying the stomach in cases of suspected gangrene or strangulation with obstruction. After operation the tube progressing into the jejunum will keep the intestine decompressed.

Intestinal intubation, therefore, is a complicated procedure and should not be attempted by the ignorant or careless. Properly and intellingently used it is life saving and one of the greatest recent contributions in the field of diagnosis and therapy in lesions of the abdomen.

RESECTION OF CARCINOMA OF RECTOSIGMOID WITH END-TO-END ANASTOMOSIS OF SIGMOID TO RECTUM*

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This case presents some problems which it occurred to me might be of general interest.

The patient, a maiden lady, 43 years of age, came to see me September 25, 1939, giving a history of intermittent bleeding from the rectum for a period of five or six weeks. No other symptoms. Examination revealed a mass which could barely be felt in the cul-de-sac per rectum. Sigmoidoscopic examination made the next day showed a growth in the rectosigmoid about six inches from the anus. Biopsy was made and it proved to be adenocarcinoma. October 3 she was sent to the hospital for observation and preparation for surgery.

Transfusion of 500 cc. of citrated blood was given on October 6. On account of the growth being so low down, it was considered likely that a permanent colostomy would have to be done with abdomenoperineal resection of the growth, and she was so informed. It was apparent at once that the suggestion of a permanent colostomy shocked her in the extreme, so I told her that is was impossible to state what type of operation would have to be done before the growth could be examined. It might be possible to resect it and reunite the bowel. She was operated on October 9.

A left rectus incision was made, extending from the pubes to about one and a half inches above the umbilicus. Exploration revealed the growth in the rectosigmoid at junction of rectum and sigmoid. On grasping the bowel and lifting it, it was found she had a very relaxed mesentery of sigmoid and rectum, and because the bowel was freely movable, it seemed quite feasible to do a resection with an end-to-end anastomosis. A transverse colostomy was therefore performed, Mickulicz type. An 18 catheter was placed in the proximal loop of bowel at time of the colostomy, and it was unnecessary to open the colostomy for ten days.

She had a normal convalescence and on November 7 the second stage of the operation was done. An incision was made to the left of the old incision to avoid close proximity to the colostomy. Six inches of sigmoid proximal to and two inches of the rectum distal to the growth were removed, together with the mensentery.

As the blood supply to the rectum was already diminished by ligation of the terminal branches of the superior hemorrhoidal artery, care was taken not to denude any more of the rectum than was absolutely necessary for anastomosis to the sigmoid. An end-to-end anastomosis was performed between sigmoid and rectum. The peritoneum was attached to the rectum just distal to the anastomosis. Three Penrose drains were placed at the site of anastomosis. The following day she was given a transfusion of 500 cc. of citrated blood.

From November 9 to December 21 the patient had a moderate rise in temperature, as high as 102°. Leukocyte count went as high as 21,000. Two weeks after resection of the bowel, she developed a thrombophlebitis affecting the right leg, which caused continuation of the fever for another two weeks.

Naturally there was some cause for worry that the anastomosis might break down and cause a fistula to form, which would appear when the fecal current was allowed to pass through the rectum. Repeated irrigations, however, showed no leakage at site of anastomosis. So on January 3 inasmuch as her temperature had been normal for a month, it appeared that good union of the anastomosis had taken place. Therefore, it seemed safe to apply the crushing clamps to the spur of the colostomy. The spur was cut through in seven days.

On January 11, the day after the crushing clamps were removed, the bowels moved thoroughly through the rectum and continued to move quite freely, although there was considerable drainage from the colostomy opening.

On January 16 a cone shaped plug made from sponge rubber, so that it fitted the colostomy quite snugly, was placed in the colostomy opening and held in position with adhesive tape. This was done to test the anastomosis at site of the colostomy. For four days the bowels moved entirely through the rectum, without any distress at site of colostomy fistula. Colostomy was closed on January 31, three weeks after the spur crushing forceps were removed. She made a good recovery from that time on. She left the hospital on February 10, a little over four months after she entered. She could have spent at least seven or eight weeks of the time she was in the hospital convalescing at home, but she insisted on staying there until the colostomy was finally closed.

CONCLUSIONS

This case could have been operated upon by doing a permanent colostomy and abdomenoperineal resection with less risk to the patient. However, due her extreme aversion to a permanent colostomy, I feel that we were justified in doing the operation that was done.

To show how seriously the idea of a permanent colostomy affected her, she told the nurse that if it was necessary for her to have a permanent colostomy, she would build a cabin in a secluded place on Hood's Canal and live there alone. This patient was undoubtedly psychologically unfitted to tolerate a permanent colostomy, as was evidenced by her marked mental depression during the time of the temporary colostomy. Immediate improvement was shown in her mental state as soon as the colostomy was closed. She is now quite happy and living a normal life.

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*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

This type of operation has a distinct place in selected cases. We are indebted to Dr. Claude Dixon of the Mayo Clinic for his work in demonstrating the feasibility of end-to-end anastomosis between sigmoid and rectum. It is probably true, as Dr. Rankin recently stated, that any operation in this area which provides for preservation of the sphincter does not compare statistically with the abdomenoperineal operation.

OBJECTIONS TO THIS TYPE OF OPERATION

1. It probably carries a higher mortality than abdomenoperineal resection with permanent colostomy.

2. The blood supply to rectum is impaired because of ligation of the terminal branches of superior hemorrhoidal artery. Healing may, therefore, be impaired.

3. It is difficult to do accurate suturing on account of depth of wound, and accurate suturing is very essential in intestinal anastomosis.

4. Infection is likely to occur because the anastomosis is an open one, and the field is so small that it is impossible adequately to protect by gauze packs the surrounding structures from contamination.

5. Multiple stage operations, with long convalescence are exhausting to the patient.

ADVANTAGE OF OPERATION

This may be stated in one sentence. Preservation of normal sphincter control adds much to the comfort and happiness of the patient, as no matter how successful we may be in securing a good functioning colostomy, we must recognize the fact that it is a great handicap to normal life.

SURGICAL SIGNIFICANCE OF FECAL IMPACTION*

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The surgical significance of fecal impaction or acute obstipation is one which is touched upon very lightly in the literature as early as 1913. There are no more than half a dozen short articles on the subject and these are stories of medical curiosities rather than, as I believe, an almost daily occurrence in any large hospital.

Colon stasis or constipation may vary from delayed emptying of the stool of normal consistency to the complete obstruction of the bowel by fecal masses of stony hardness. Fecal impaction is only an extreme degree of constipation, in which fecal masses by their size, consistency and location fail to move downward in the bowel. Cathartics may cause liquid feces and gas to pass impactions just as rocks in the bed of a river are frequently little affected by the stream. If a collection of stool produces a degree of obstruction or acute inflammation, it may become a surgical problem and a matter for decisive differential diagnosis.

Constipation is probably the most common symptom of the patients of a gastroenterologist. Severe cases almost always complain of three symptoms: (1) exhaustion, (2) nervousness, (3) gas or bloating. Occasionally a constipated patient may rather suddenly develop a condition resembling an acute surgical abdomen with or without signs of partial or complete obstruction of the bowel.

The presence of firm or hard fecal masses may be the sole cause of nausea, vomiting, pain, tenderness and abdominal distension. At the site of the impaction an area of hyperacute or supppurative colitis may develop, resulting in point tenderness, toxemia, fever, rigidity and leukocytosis.

Fecal impaction occurs frequently in children, producing nausea, vomiting and fever and is usually recognized promptly by the physician. Impactions may occur in adults and should always be thought of in the differential diagnosis of the acute abdomen. Fecal or barium impactions may form behind bowel tumors, strictures and obstructions, but in these situations are secondary to other pathology and are not considered here, though they may serve to call attention to the primary condition. I wish to discuss only those patients, whose condition is solely due to abnormal collections of fecal matter in the normal large bowel.

This subject was brought to my attention by a very dramatic case at King County Hospital in 1934 and since that time by seventeen others at the hospital and in my own practice. Brief histories illustrating the surgical significance of fecal impactions are presented.

Case 1. Mr. S, at King County Hospital, age 54, gave a history of severe constipation requiring a daily purgative for over thirty years. He was referred to King County Hospital by his physician as a case of carcinoma of the sigmoid colon with obstruction confirmed by roentgenograms.

Sigmoidoscopic examination by the resident showed edema, congestion and impassable obstruction at the rectosigmoid junction. He had been vomiting for twenty-four hours, was dehydrated and distended. He had a temperature of 99.6°, pulse 100, leukocyte count 18,000, 80 per cent polys. Trace of albumin in the urine.

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*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

He was given an intravenous injection of 5 per cent glucose and physiologic salt solution and operated upon at once. A Horsley cecostomy was done, in which the cecum is brought out through a muscle splitting incision, sutured to the peritoneum and opened with a cautery. At the time of the operation no tumor was found but it was noted that the entire colon was completely filled from the cecum to the sigmoid with firm puttylike feces interspersed with hard masses. After the cecostomy was done, the abdomen rapidly flattened and irrigations of the bowel were begun. The colon was finally cleared after two weeks of daily colonic irrigations, when to our amazement the skiagram of a barium enema revealed a normal colon. The cecostomy was then closed and the patient discharged cured of his obstruction as well as his constipation.

Case 2. A married female, age 36, was seen at the home of a physician at 6 a.m., complaining of nausea, vomiting and lower abdominal pain since midnight. She had been in fairly good health except for nervousness, exhaustion and constipation for the past year. Examination revealed a thin toxic woman in obvious discomfort. Temperature 101°, pulse 110; general examination negative except for generalized lower abdominal tenderness more marked in left lower abdomen where moderate rigidity was noted.

She was taken to Maynard Hospital where blood count showed 23,000 w.b.c. with 92 per cent polys and normal urine. Pelvic examination revealed a palpable mass in left pelvis with exquisite tenderness in left fornix. Tentative diagnosis was made of acute pelvic inflammatory disease with tuboovarian mass. Slides of cervix and urethra were negative for gonococcus. Rectal examination revealed hard feces in rectum.

A S.S. enema was given and returns were highly colored with a few pieces of constipated stool. Colonic irrigations were given three times a day for three days, when it was noted that the tumor mass was gone. Her temperature was normal on the fourth day and she was discharged cured on the fifth day.

Case 3. A female child, age 7, seen at Maynard Hospital in consultation with family physician October, 1939, at 11 a.m. She was awakened during the night by generalized abdominal pain followed by nausea and vomiting. A pediatrician was consulted who made a tentative diagnosis of acute appendicitis.

She had temperature 100°, pulse 100. Blood count showed 18,000 w.b.c. and normal urine. General examination was essentially negative except for abdomen. There was moderate tenderness and slight spasticity of right lower abdomen with some distension. Her past history was negative except for persistent constipation and she had not had a bowel movement for two days. Rectal examination revealed constipated stool and tenderness in right pelvis.

An enema was given and returned highly colored with a few pieces of constipated stool. Three colonic irrigations were then given and at 7 p.m. the temperature had dropped to normal and the abdominal tenderness had completely disappeared and w.b.c. was 11,000. She was discharged the next day completely relieved.

DIAGNOSIS

The most frequent sites of fecal impaction are rectum, descending and sigmoid colon, cecum and ascending colon, and distal transverse colon. A palpable mass may frequently be found at the site of impaction. Light finger tip palpation should be used to localize the masses as heavy pressure tends to flatten them out.

A palpable cecum is considered pathologic and the nature of a palpable mass in this region should always be accurately determined. A sigmoidoscopic examination will reveal presence of masses in rectum and distal sigmoid colon. A skiagram or flat plate of the abdomen, taken to show soft tissue, will localize impactions. A barium enema given under the fluoroscope may clearly demonstrate fecal masses as the contrasting medium passes by and around them.

TREATMENT

Fecal impactions in the rectum, sigmoid and descending colon may be removed by repeated enemas of any type. Warm water or weak sodium chloride enemas are to be preferred as repeated injection causes little or no irritation of the bowel. Impactions of cecum, ascending and transverse colon may be removed by repeated warm water or physiologic salt solution colonic irrigations. These should be given with the patient lying on his back. Two quarts of solution are injected slowly and with not more than three feet of water pressure. The solution is retained fifteen minutes if possible. Such an irrigation passes quickly to the cecum and may be repeated three times a day for several days without undue irritation to the bowel.

Repeated thick barium solution enemas given under the fluoroscope and with manual manipulation of masses will frequently relieve an impaction. Service of a competent physiotherapist is indispensible, where it is inconvenient or impossible for the patient or his physician to give the colonic treatments.

Twenty-four hours preceding most surgical operations, a colonic irrigation will lessen the distressing symptoms caused by postoperative gas distension. One week after the patient has left the hospital a series of two or three colonic irrigations will often eliminate an amazing amount of undigested food and fecal matter. Postoperative anorexia is benefited by improvement of lymph circulation of the splanchnic area with beneficial reflex effects on the liver, pancreas, stomach and kidneys.

CONCLUSION

Fecal impaction or acute obstipation may simulate the acute surgical abdomen and should be considered in the differential diagnosis.

DEFUNCTIONING PROCEDURES AS ADJUNCT TO INTESTINAL SURGERY*

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Among the greatest hazards to successful surgery of the intestinal tract has been peritonitis. Many efforts have been made to guard against this complication. Peritoneal vaccination has been tried. Local and systemic use of sulfonamide compounds is receiving attention. Numerous methods of performing relatively aseptic anastomoses have been devised.

Exteriorization operations of the Mikulicz type have received wide usage since they reduce the dangers of peritonitis which accompany primary anastomosis. Recently the wider employment of defunctioning procedures, partial or complete, is becoming evident. They not only materially reduce the dangers of peritonitis but have other merits as well.

Among the advantages of preliminary defunctioning is placing of a diseased part at rest with consequent local improvement in many cases; the ease with which surgery may be carried out on defunctioned bowel, reduction in the likelihood of peritonitis from contamination, resting of the anastomosed area during its period of healing, and increasing comfort of the patient by avoidance of distention and "gas pains." The defunctioning methods vary from mere decompression of the bowel to absolute diversion of the fecal stream with complete rest and relative debacterialization of the distal segment. Choice of method naturally depends upon the individual situation.

COMMON DECOMPRESSION PROCEDURES (FIG. 1)

The importance of decompressing obstructed

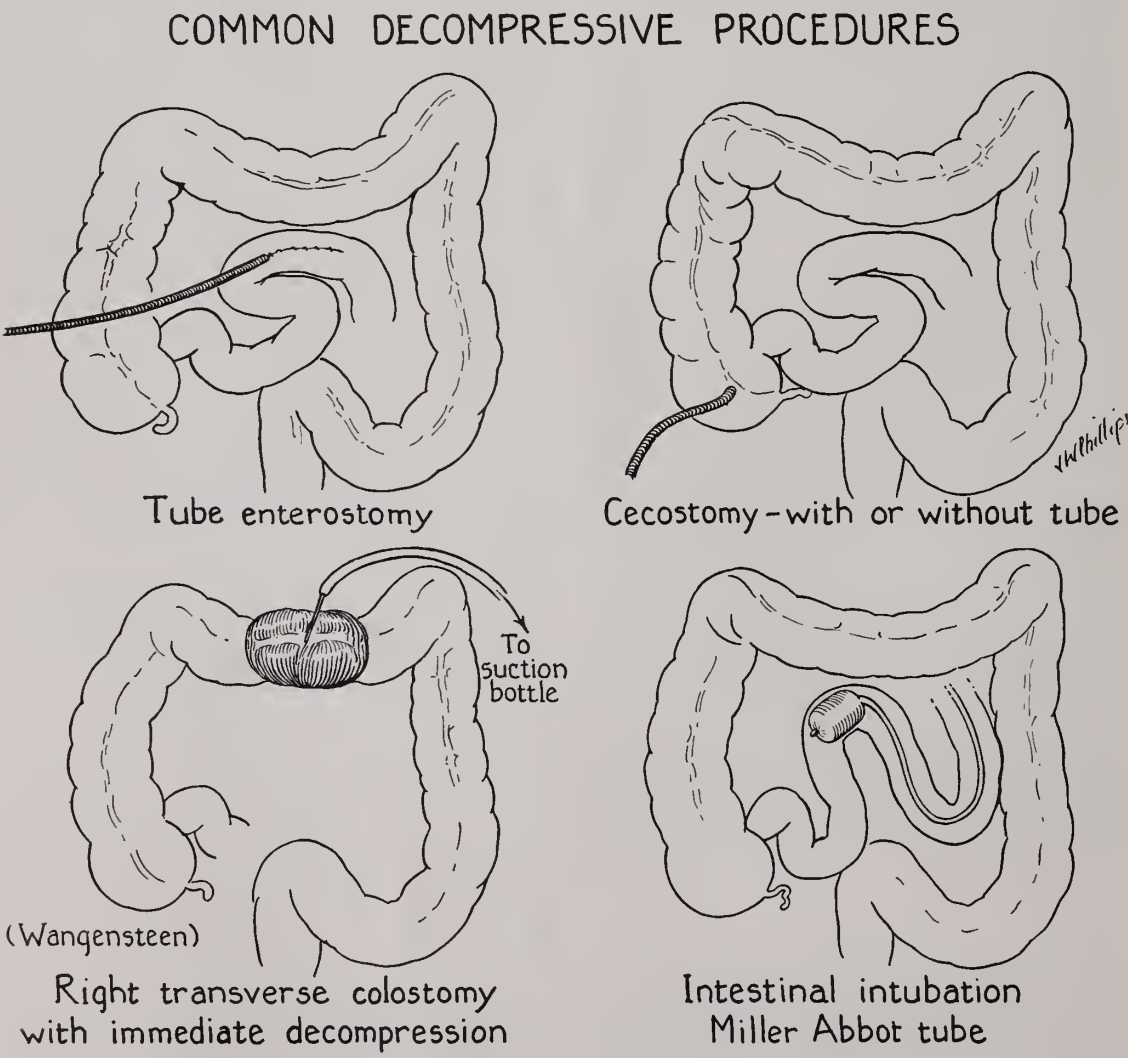
COMMON DECOMPRESSIVE PROCEDURES
Tube enterostomy
Cecostomy-with or without tube
JWPhillips
To suction bottle
(Wangensteen)
Right transverse colostomy with immediate decompression
Intestinal intubation Miller Abbot tube

Fig. 1. Common Decompressive Procedures.

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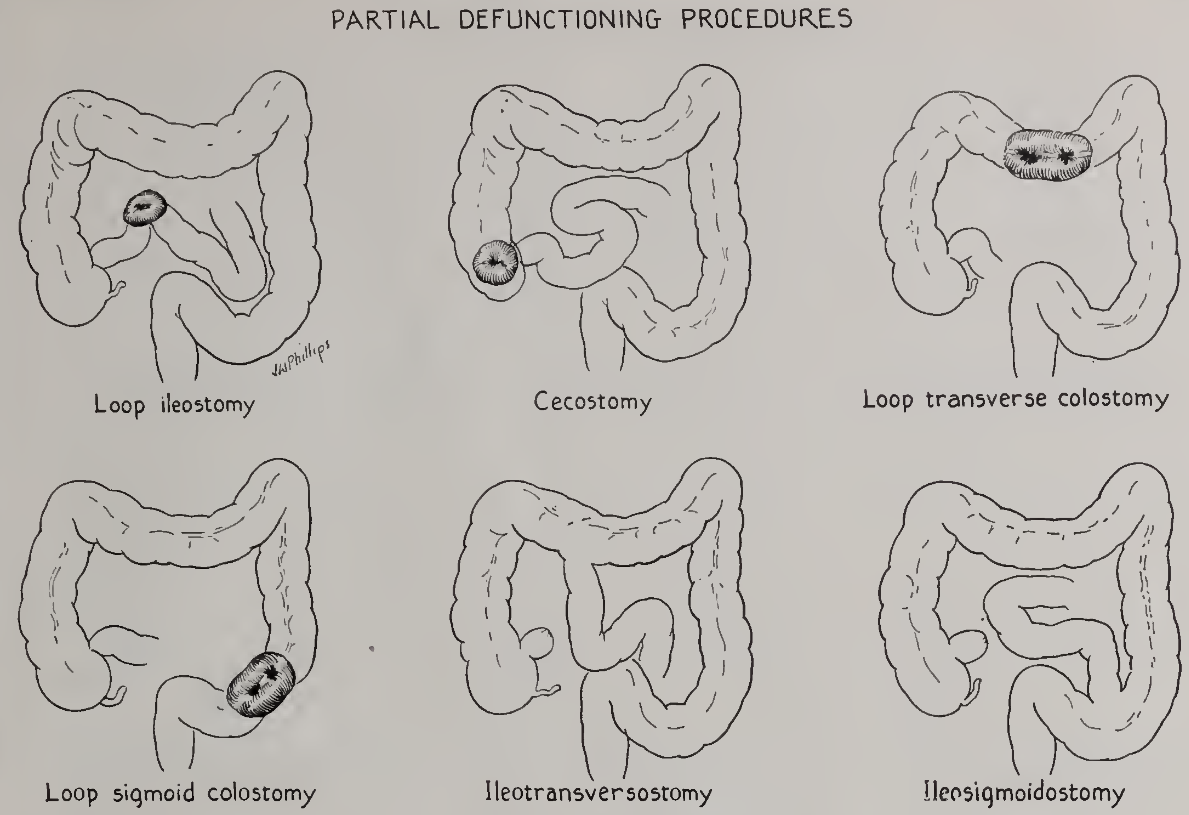

Loop ileostomy   Cecostomy   Loop transverse colostomy

Loop sigmoid colostomy   Ileotransversostomy   Ileosigmoidostomy

Fig. 2. Partial Defunctioning Procedures.

bowel preliminary to intestinal resection has long been recognized. Tube enterostomy, preceding or accompanying resection in the presence of obstruction, has been frequently employed. Likewise the importance of decompressive cecostomy as preliminary to resection of obstructing colonic lesions is well recognized. Its value has been reemphasized in the past decade by Whipple[1] and Rankin.[2]

Whipple[3] has also demonstrated the Miller-Abbott tube as a valuable decompressive agent accompanying colonic surgery. Wangensteen[4] has described a method of performing transverse colostomy with immediate decompression of distended colon. All of these procedures are aimed at decompressing obstructed bowel before it is submitted to direct surgery. Unless immediate surgery is necessitated by an unusual factor such as devitalized bowel, some such preliminary relief of obstruction is essential.

PARTIAL DEFUNCTIONING PROCEDURES
(FIG. 2)

Included in this group are those operations which produce considerable diversion of the fecal stream, but in which defunctioning is not complete. The area of disease or intestinal wound healing is thus placed at relative rest. Loop ileostomy, cecostomy, loop colostomy and the various short-circuiting procedures are designed for this purpose. No doubt some of the loop procedures completely defunction the distal bowel, while in others part of the fecal stream passes over into the distal segment.

Construction of the loop and height of the spur between the limbs probably play an important part in the degree of exclusion. Cecostomy usually diverts only gas and a relatively small part of the fecal stream. The same applies essentially in side-to-side short-circuiting anastomosis. End-to-side short-circuits, however, have a much more defunctioning influence, although not complete, as has been shown in recent roentgen studies.[5]

The partial defunctioning procedures enumerated receive wide usage. Loop ileostomy has been frequently employed in treatment of ulcerative colitis, although complete exclusion has been deemed more preferable. It is likewise being used as a preliminary to colonic and abdominoperineal resections. It has recently been employed by Forbes[6]

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[1] Whipple, A. O.: Advantages of Cecostomy Preliminary to Resections of Colon and Rectum. J.A.M.A., 97: 1962-1964, Dec. 26, 1931.

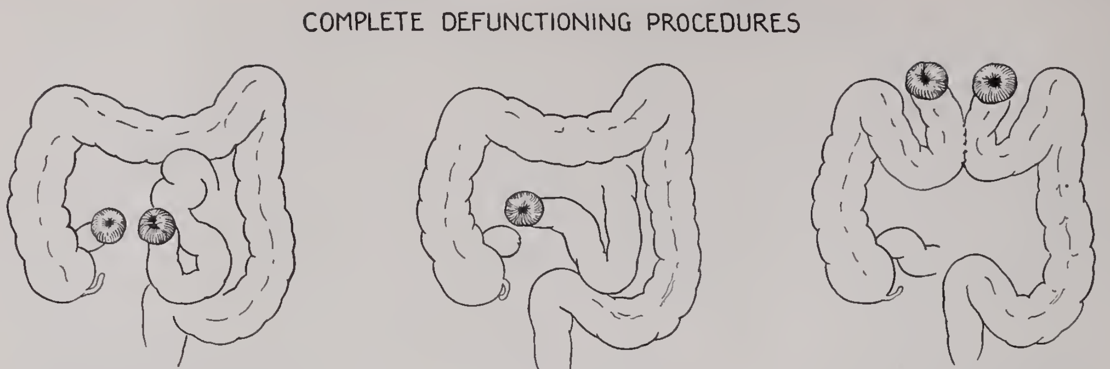
[2] Rankin, F. W.: Value of Cecostomy as Complementary and Decompressive Procedure. Ann. Surg., 110:380-388, Sept., 1939.

[3] Whipple, A. O.: Use of Miller-Abbott Tube in Surgery of Large Bowel. Surgery, 8:289-293, Aug., 1940.

[4] Wangensteen, O. H.: Bowel Obstructions, p. 148. Chas. C. Thomas Co., Springfield, Ill., 1937.

[5] Ginsburg, L., Colp, R. and Sussman, M.: Ileocolostomy with Exclusion. Ann. Surg., 110-648-655, Oct., 1939.

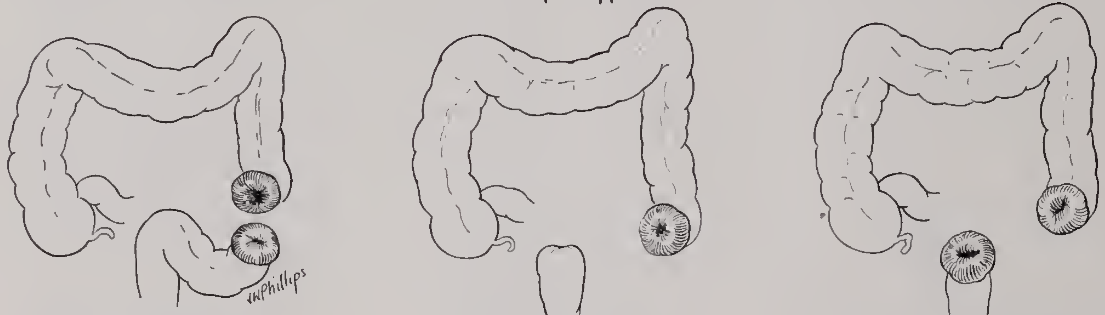
[6] Forbes, R. D.: Personal Communication.



Double barreled ileostomy with skin between

Single loop ileostomy distal loop dropped

Devine transverse colostomy



Sigmoid double barreled colostomy. Skin between

Sigmoid end colostomy with distal loop dropped

Left inguinal and suprapubic openings preliminary to Lahey resection

Fig. 3. Complete Defunctioning Procedures.

and by Baker[7] as a preliminary to surgery of gastrojejunocolic fistula. Cecostomy has been advocated by Whipple[8] as not only a decompressive but a defunctioning procedure preliminary to colonic surgery.

He enumerated the following as some of the advantages: (1) It makes possible a proper cleansing of the colon before the major procedure. (2) It permits the part anastomosed to be at rest until the period of fibroplasia is complete. (3) It increases the comfort of the patient by reducing distention and pains of ineffectual peristalsis. (4) It obviates the temptation and necessity in some cases of giving enemas or irrigations in the critical period of repair. (5) If it works so well in patients who are acutely obstructed, it is even more efficacious in the nonobstructed case.

Loop colostomy, likewise, has these merits but more often necessitates surgical closure. Nevertheless, its value in diverticulitis and accompanying complications, rectovaginal fistula, colonic or rectal cancer and many other conditions warrants its use. Not infrequently an apparently inoperable carcinoma is rendered not only operable but curable following defunctioning by colostomy. Similar claims can be made for properly constructed short-circuiting operations.

COMPLETE DEFUNCTIONING PROCEDURES
(FIG. 3)

Complete defunctioning of bowel in arresting disease or as a preliminary to extensive and hazardous intestinal surgery is relatively new and gaining in popularity. The advantages of dividing the terminal ileum and performing complete exclusion in treating ulcerative colitis and as a preliminary to colectomy have been emphasized by Cattell,[9] Cave[10] and others. Devine[11] has described a method of performing transverse colostomy which completely defunctions the distal bowel preliminary to surgery of the left colon and rectum, particularly in cases where end-to-end anastomosis is contemplated.

He states the advantages are, first, that the main operation is carried out under favorable conditions with absence of septic feces, functionless collapsed and retracted colonic walls and low bacterial count; and, second, that the wound in the intestine is allowed to heal under these conditions. More recently a modification of the Devine colostomy has been developed by Ochsner and his associates.[12]

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[7] Baker, J. W.: Ileostomy Preliminary to Gastrojejunocolic Fistula. Northwest Med., 39:398-403, Nov., 1940.

[9] Cattell, R. B.: Colectomy for Intractable Ulcerative Colitis. Surgical Clinics of North America, 17:803-814, June, 1937.

[10] Cave, H. W. and Nickel, W. F.: Ileostomy. Ann. Surg., 112:747-762, Oct., 1940.

[11] Devine, H.: Operation on Defunctioned Distal Colon. Surgery, 3:165-194, Feb., 1938.

Complete defunctioning of the rectum and rectosigmoid as the first stage of abdominoperineal resection receives frequent usage. A double barreled sigmoid colostomy with skin between or a single barreled sigmoid colostomy with the lower loop closed and dropped are the most common methods. The Lahey modification of the former has the advantage of simplifying the second stage. All place the distal segment at rest, permit irrigations to cleanse the diseased bowel, and make for greater safety in carrying out the extensive resection.

SUMMARY

One of the greatest hazards to surgery of the intestinal tract is peritonitis. Defunctioning procedures not only reduce the incidence of this complication but they have other merits as well. They seem definitely indicated in certain cases.

The procedures vary from mere decompression of bowel to absolute diversion of the fecal stream with complete rest and relative debacterialization of the distal segment. The choice of method depends upon the individual situation.

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[12] Ochsner, A., Debakey, M. and Rothschild, J.: Defunctionalizing Colostomy. J.A.M.A., 113:568-573, Aug. 12, 1939.

RETENTION FOLLOWING GASTRIC SURGERY*

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Case 1: Male, white, aged 66.

Present complaint. Epigastric pain, loss of weight and weakness.

Onset and course. He states that he has always had a weak stomach. For the past six to seven years he has had frequent mild attacks of epigastric distress. Present illness began about five months ago, at which time he became severely constipated and passed several days without a bowel movement. He took a number of drastic laxatives and had a profuse movement almost inky in color.

The patient continued to be constipated. About this same time daily distress appeared in the epigastrium which was rather mild in early morning before breakfast and most severe beginning about one hour after meals and would persist until the following meal, after which he would have relief for an hour or two. The distress was never severe enough to keep the patient from sleeping and never awakened him at night. The type of food taken made little difference. He had considerable tenderness in the epigastrium and a feeling of faintness and weakness. He obtained relief from soda after belching. He has lost twenty pounds weight in the last two months.

Examination. Patient's complexion is rather pale and sallow, and he shows evidence of loss of weight. He points to his distress as being high in the midepigastrium. There is moderate tenderness throughout the entire upper abdomen and a sense of resistance in the midline towards the right side but no sharply defined tumor mass.

Laboratory findings. Hemoglobin, 55 per cent, red blood cells, 2,600,000, white blood cells 6,800; Ewald no free hydrochloric acid, and total is 14. Occult blood 4+.

Diagnosis. Carcinoma of the stomach.

Transfusion. August 20, 1940.

Operation. August 21. A small craterlike ulcer was found in the prepyloric part of the stomach on anterior wall near the lesser curvature. About two-thirds of the stomach was resected and antecolic end-to-side anastomosis was made between the stomach and jejunum. The stoma was narrowed to admit three fingers by closing upper half of the cut end of the stomach near the lesser curvature.

This patient did quite well until the tenth postoperative day, at which time he had abdominal cramps, a large emesis and hiccoughs. A Levine tube was inserted and continuous suction started and continued for two days. It was removed but had to be replaced in one day because of hiccoughs and emesis. It was left in place for a few hours only. The next day roentgenograms showed delay in stomach emptying and considerable gastric residue after twenty-four hours.

Although the total serum proteins was 6.51 gm. per 100 cc. which is within the normal range and well above the edema level, another transfusion of blood was given. Alternate periods of relief and obstruction occurred and a second roentgenogram was taken. This showed that most of the barium entered the proximal loop where the stasis occurred, while some of it went into the distal loop.

It was decided that the obstruction was mechanical rather than due to edema, and just one month after the first operation a second was done. At this operation numerous dense adhesions were encountered. The stomach and jejunum were densely adherent to the anterior abdominal wall in the region of the anastomosis and incision. The distal loop of the jejunum was acutely angulated and adherent to the anastomotic line. The stomach and jejunum were freed from the abdominal wall and an anastomosis made between the proximal and distal loops of the jejunum. After this operation the patient had no more obstruction and made a good recovery.

This case is presented not because it is in any way unusual, but because it presents a complication which is not uncommon following gastric surgery, and treatment of which presents a problem in surgical judgement.

There are two types of obstruction following either gastroenterostomy, resection or pyloroplasty. They are either the result of edema or are mechanical.

A degree of edema due to the trauma of operation occurs at the anastomosis which lasts from forty-eight to seventy-two hours. This may be exaggerated and prolonged by the edema of hypoprotenemia. This is the result of excessive loss of plasma protein into the tissues as in extensive burns. It is also the result of a defect in protein synthesis associated with hepatic disease, and, finally, from protein restriction in diet which is found in gastric and duodenal ulcer and cancer. The resulting edema occurs because the osmotic pressure exerted by the plasma within the blood vessels is reduced and fluids as a result leave the vessels for the tissues. There is an increase in the tissue fluids throughout the body. It occurs in the bowel wall, decreases its motility and adds to the edema at the anastomosis. This may produce obstruction at the stomach outlet, simulating the mechanical types. Starling[1], Jones, Eaton and White[2, 3], Ravdin, Barden, Frazier and Mecray[4, 5, 6], have called attention to this complication.

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*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

Mechanical causes of obstruction, as presented so well by Balfour[7], are as follows: (1) The anastomosis may be drawn into the lesser omental cavity through the mesocolon. This occurs in posterior gastroenterostomy and in postcolic anastomosis following resection. (2) Adhesions causing angulation and obstruction to the loop of jejunum distal to the anastomosis. (3) Obstruction and dilatation of the long proximal loop in the antecolic type of anastomosis with resection in which an anastomosis has not been done between efferent and afferent loops of jejunum.

In cases of retention following stomach surgery it is of first importance to attempt to determine the type. The following facts may be of some help in making this differentiation: A gastric retention for the first few days may be due to edema at the anastomosis, caused by the trauma of operation. If this persists beyond that period, hypoprotenemia should be suspected. Total plasma proteins below 5.2 grams per 100 cc. usually produce edema, although this point is not fixed and varies with dilution of the plasma and the total amount of sodium chloride given[8].

If the obstruction persists after the plasma proteins and fluid balance have been returned to normal. mechanical obstruction is probable. Obstruction of the proximal loop in gastric resection is most serious, and rapidly fatal increasing shock and death result unless intervention is early. The reason for this is that the proximal end of the duodenum has been closed during resection and the duodenum becomes greatly and rapidly distended with its own secretion and with the total bile and pancreatic secretion.

The best treatment in these cases is preventive. Patients should be brought to the surgery properly prepared. These cases who are not undernourished and have had no retention need little preparation, but frequently in ulcer and cancer cases undernourishment is present and the pylorus may be obstructed, producing retention. Many of these patients have restricted their own diet because of fear of eating, and others have been placed on too limited diet by their physicians.

The most common deficiency in these cases is a protein deficiency. Proteins of the plasma and labile protein of the body are best replaced through the intestinal mucosa which seems to condition the protein for replacement and use in the body. If this is not possible, they may be replaced by adequate amounts of parenteral plasma. Preoperative gastric retention is corrected by daily, twice daily or continuous stomach siphonage. If retention is not too great, retention feedings six times a day may be given between lavages. Vitamin deficiencies in the undernourished are common. Gray[9] recommends the following method of replacement: 10 mg. of thiamin chloride intravenously daily, 100 mg. of cevitamic acid twice daily intravenously, and 100 to 150 mg. of nicotinic acid twice daily subcutaneously.

At King County Hospital, where nutritional disturbances are much greater than in private practice, the above maintenance dosage of vitamins is not sufficient to condition these patients for surgery in a reasonable length of time. Dr. Rosellini, experimenting in vitamin dosage, has found the following procedure very effective and rapidly conditions these patients for operation: cevitamic acid (cenolate) 500 mg. intravenously daily, thiamin chloride 108 mg. or 5cc. intravenously. Nicotinic acid is only given when specific evidences of deficiency are present, and then 250 mg. intravenously are given daily.

A normal fluid balance should be established. If the patient is anemic, plasma transfusions should be replaced by blood transfusions. Less than eight gm. of hemoglobin per 100 cc. of blood is required before surgery is attempted.

In presence of an established postoperative retention the first requisite is to keep the stomach deflated and empty by either intermittent or continuous stomach siphonage. The total serum proteins should be corrected and, even if the serum protein estimate is above the edema level, transfusion of plasma or blood is indicated to make certain of this.

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[1] Starling, E. H.: Fluids of the Body. The Herter Lectures. Chicago, W. T. Keener & Co., 1909.

[2] Jones, C. M. and Eaton, F. B.: Postoperative Nutritional Edema. Arch. Surg., 27:159-177, July, 1933.

[3] Jones, C. M., Eaton, F. B. and White, J. C.: Experimental Postoperative Edema. Arch. Int. Med., 53:649-674, May, 1934.

[4] Mecray, P. M., Jr., Barden, R. P. and Ravdin, I. S.: Nutritional Edema. Surgery, 1:53-54, Jan., 1937.

[5] Ravdin, I. S.: Factors Involved in Retardation of Gastric Emptying After Gastric Operations. Pennsylvania M. J., 41:695-700, May, 1938.

[6] Barden, R. P., Ravdin, I. S. and Frazier, W. D.: Hypoproteinemia as Factor in Retardation of Gastric Emptying After Operations of Billroth, I or II Types. Am. J. Roentgenol., 38:196-202, July, 1937.

[7] Balfour, D. C.: Emergency Complications Occurring After Operations on Stomach and Duodenum and Their Treatment. Ann. Surg., 98:882-889, Nov., 1933.

[8] Weech, A. A. and Ling, S. M.: Nutritional Edema. J. Clin. Investigation, 10:869-888, Oct., 1931.

[9] Gray, H. K. and Chauncey, L. R.: Preoperative and Postoperative Care and Complications in Gastric Surgery. S. Clin. N. America, 20:989-1004, Aug., 1940.

If it is decided that the obstruction is mechanical, the type of secondary operation has to be determined as well as the most advantageous time to do it. It is easiest as far as technical difficulties are concerned to reoperate during the first week, but it is seldom necessary during this period. Reoperation is usually done during the third week. If enough nourishment gets by the obstruction, reoperation may be advantageously postponed until most of the inflammation about the anastomosis has subsided. This in itself may relieve the retention. Immediate reoperation is indicated when, because of the acute symptoms following a gastric resection, it is felt that the obstruction is in the proximal loop.

The secondary operations of choice depend on what is found at reoperation, but a jejunostomy distal to the anastomosis is the operation of choice in most cases. Placing food, especially proteins, into the jejunum appears to aid by restoring normal peristalsis and more rapidly and efficiently restoring body proteins.

In this connection, since operating on the above case I have used the Abbott-Rawson[10] tube in two cases of stomach resection. This tube has a long and a short arm. The long arm is placed into the distal loop of the jejunum at the time of operation and the end of the short arm is placed at the level of the stomach. The stomach is kept deflated by suction applied to the short arm and jejunal feedings are given through the long arm as advocated by Ravdin and Stengel.[11,12] These were both difficult cases and both had very smooth convalescences.

The next secondary operation of choice is enteroanastomosis between the distal and proximal loops. It is indicated when the anastomosis has been pulled into the lesser omental sac through the opening in the transverse mesocolon. It is also indicated in the antecolic type of resection, when the long proximal loop does not empty well, and when the obstruction is in the proximal loop near the anastomosis. The enteroanastomosis is not done at the primary operation, when it is being done because of an ulcer, as it diverts the alkaline contents of the duodenum away from the anastomosis and allows the unneutralized acid chyme to come directly in contact with the unprotected jejunal mucosa and predisposes to jejunal or marginal ulcers. Other secondary operations depend on the primary operation and consist of gastroenterostomy or stomach resection, following unsuccessful pyloroplasties or stomach resection following unsuccessful gastroenterostomy.

The above reported case was not reoperated upon for one month in the hope that the retention was due to edema and this would subside. A second reason was that some food was going past the obstruction and it was felt that a better operation could be done after the tissue reaction from the first operation had subsided. I would have liked to delay this operation even longer, but the patient appeared to be losing ground. It was not determined from the first roentgenograms that most of the food was entering the proximal loop. This was evident only in the last plates taken. Enteroanastomosis was not done at the first operation because the pathology was found to be a gastric ulcer rather than cancer.

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[10] Abbott, W. O. and Rawson, A. J.: Tube for Use in Postoperative Care of Gastroenterostomy Cases. J. A. M. A., 108:1873-1874, May 29, 1937.

[11] Stengel, A., Jr. and Ravdin, I. S.: Maintenance of Nutrition in Surgical Patients with Description of Oro-Jejunal Method of Feeding. Surgery, 6:511-519, Oct., 1939.

[12] Ravdin, I. S., Stengel, A., Jr. and Prushankin, M.: Control of Hypoproteinemia in Surgical Patients. J. A. M. A., 114:107-112, Jan. 13, 1940.

PERNICIOUS ANEMIA AND CANCER OF THE STOMACH*

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The relation between pernicious anemia and gastrointestinal pathology has long been the subject of clinical and experimental interest. Pernicious anemia and cancer of the stomach have certain features in common. Both develop only after certain structural and functional changes have existed in the stomach. As improved therapy has prolonged the lives of individuals suffering from these conditions, it is evident that there is a definite tendency to their coincidental or sequential development.

Surgical or experimental ablation of a large portion of the stomach would be expected to be followed by the development of pernicious anemia, but clinical observation and animal experimentation have failed to support this expectancy. In 1934 Eusterman summarized the situation at that time as follows: “So far as I can determine, we have had (at the Mayo Clinic) only three probable instances of primary hyperchromatic anemia following extensive resection of the stomach or gastrectomy for carcinoma. From the experimental standpoint we know that total gastrectomy performed on dogs, pigs and rats is never followed by primary pernicious anemia.”

However, this generally held opinion is not so convincing if we realize that, when pernicious ane-

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*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

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mia follows extensive gastric resection, it occurs late, averaging eight years after the operation. This would logically suggest that even in cases of complete gastrectomy there still exists in most cases an adequate supply of the intrinsic factor preventing pernicious anemia, and that in certain instances the source of this supply is gradually impaired by continued chronic disease of the upper gastrointestinal tract.

Meulengracht throws more light on this problem. He describes as the "pyloric organ" scattered collections of glands which elaborate the antianemic intrinsic factor. These glands are found in the antrum along the lesser curvature and include Brunner's glands in the duodenum. After gastric resection there may still remain sufficient of these protective glands, but subsequent pathology may seriously impair the precarious supply of antianemic substance.

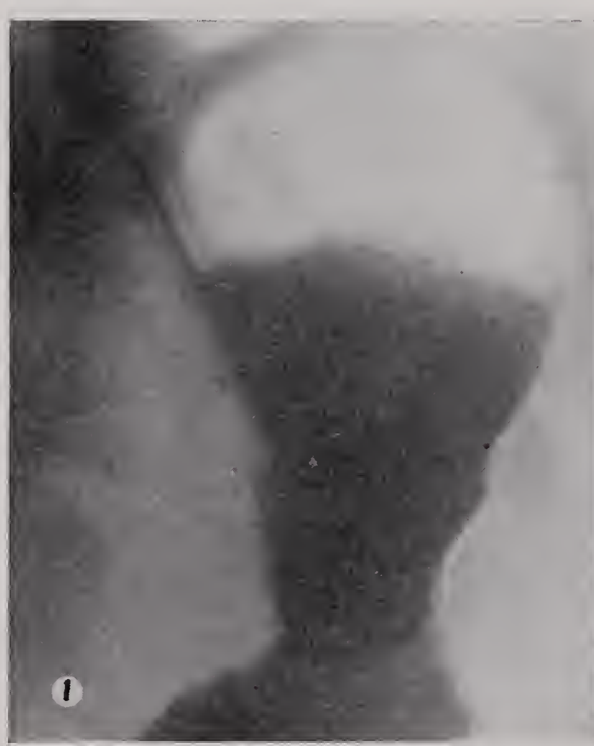

Fig. 1. Stomach after partial gastrectomy, Sept. 12 1925.

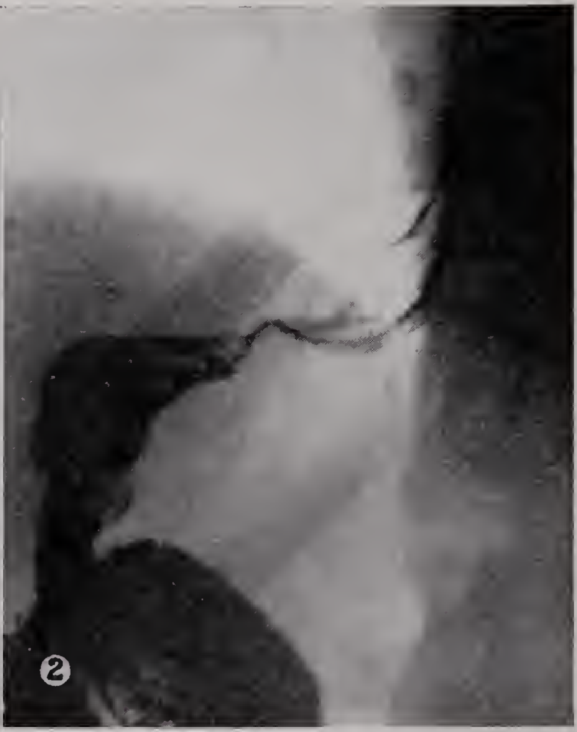

Fig. 2. Carcinoma of stomach and esophagus shortly before death, Sept. 1, 1939.

Following radical gastric operations, chronic changes, inflammatory or degenerative, involving the mucous membrane of the residual stomach are the rule. The altered gastric function, particularly the production of anachlorhydria, favors the development of chronic infection in the upper intestinal tract. This may be a factor in reducing the production of antianemic material. Magnus and Angley (London) examined the stomachs fixed soon after death, from seven cases of pernicious anemia. Macroscopically the changes were identical in all cases. The upper two-thirds of the stomach showed severe atrophy, the walls being reduced to the thinness of parchment. At junction of the body with the pyloric mucosa, there was an abrupt transition to normal thickness. Experimental work on dogs has shown similar findings after partial gastrectomy. Histologic examination indicated that the process was not inflammatory, but a degeneration or atrophy of disuse. Thus we have, following gastrectomy, a tendency to atrophic changes and gastric dysfunction that may favor the development of either cancer of the stomach or pernicious anemia, and in some cases both of these conditions in the same individual.

The case here reported is that of a man who had symptoms of ulcer for three years. At 30 years of age, he had a partial gastrectomy for an obstructing carcinoma in the pyloric region. Three months later he developed a severe gastritis lasting three months, and causing marked contraction and thickening of the walls and complete absence of hydrochloric acid and ferments. Nine years after operation he developed pernicious anemia which responded promptly to liver therapy. Fifteen years after partial gastrectomy he developed a carcinoma, involving the residual stomach and lower esophagus.

CASE REPORT

When first seen on August 22, 1925, this man was 30 years of age. Before his illness, he had been strong and well, with good appetite and weighing about 155 pounds. Three years before, he began to have pain and burning in the epigastrium, with heartburn and sour eructations two or three hours after meals. These symptoms were promptly relieved by soda and other alkalies. He was told that he had an ulcer and on an ulcer regime got early relief. Each succeeding spring he had a similar attack, lasting three to four weeks.

The present attack started three months ago, with symptoms similar to those of previous attacks, but after four weeks he had but little relief and his symptoms gradually changed. He completely lost his appetite, pain became more constant and was not relieved by food or alkalies. In fact, he became afraid to eat and rapidly lost weight and strength. About the fifth week he began to vomit and soon was retaining little or no food.

Examination showed a small, very thin man, with pinched features and pale, dry skin. He weighed 92 pounds and was weak and breathless. Reflexes were normal, blood pressure 120/70, pulse 88, regular but weak. His abdomen was large and in the epigastrium could be felt a hard, rather tender mass which moved with respiration. Roentgen examination of the chest was negative. The stomach was large, filling the greater part of the abdomen and no barium passed through the pylorus. The gastric contents after a test breakfast showed free HCl 30, total acid 40 and gave a positive test for blood. His hemoglobin was 68 per cent and red cells 2,900,000. Wassermann was negative. The diagnosis was carcinoma of the lesser curvature with pyloric obstruction.

Operation showed a large hourglass ulcer with firm, irregular, overhanging borders and induration extending along the lesser curvature to the pylorus. A partial gastrectomy was done (fig. 1). He made a satisfactory recovery, leaving the hospital in two weeks.

Three months later he began to have severe pain immediately after eating any food. He felt that he had a recurrence and did not consult a physician for some weeks. However, he gradually recovered in the course of three months. He then remained well and strong, working hard every day for the next nine and one-half years, though repeated examination showed no gastric acid or ferments. Toward the end of this long period of achlorhydria, roentgenogram of his bones showed no signs of decalcification.

On January 25, 1935, nearly ten years after his operation, he consulted me again. He stated that up to a few months previously he had been strong and well, enjoying hard work and eating as much as any laboring man. About three months before, he lost his appetite and ate very little. He lost weight and soon became pale, weak and breathless on slight exertion but remained at work. About four weeks ago he completely lost his appetite and his ankles began to swell. This swelling increased until it reached his knees. He had cramps in his legs and numbness in his feet. He complained of no gastrointestinal symptoms except marked anorexia.

Examination showed him to be pale with yellowish tinge to his skin, weak and breathless. He had marked edema of the feet and legs. His abdomen was flat and no mass could be felt. A fluoroscopic examination showed a small stomach with no filling defect. Urine was normal. Blood examination showed hemoglobin 26 per cent with erythrocytes 1,070,000 and color index 1.2. There was marked macrocytosis and poikilocytosis. There were no nucleated reds.

His response to liver therapy was dramatic. There was prompt return of appetite, disappearance of edema, change in color and rapid gain in strength which allowed him to resume his work in a few weeks.

Blood picture was as follows:

1935	Erythrocytes	Hb	Color Index
Jan. 25	1,070,000	26	1.2
Feb. 7	2,600,000	55	1.4
Feb. 29	3,600,000	68	

He worked steadily for the next five years in spite of several mild recurrences due to insufficient treatment. In one of these he developed rather marked numbness and parathesia of the extremities.

In June, 1939, nearly fifteen years after his gastrectomy, he began to complain of loss of appetite, weakness and dyspnea. His liver dosage was stepped up but he did not improve and in about a week he complained of difficulty in swallowing. Roentgenogram showed definite evidence of a second carcinoma which had reduced the residual stomach to a thin irregular tube and involved the lower esophagus, producing a high degree of obstruction (fig. 2). Death occurred in October, 1939.

ACUTE PANCREATITIS*

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Diagnosis of acute pancreatitis has seldom been made except on the operating table or in the postmortem room. This can be explained in part by the difficulties of separating symptoms of this disease from those of other acute abdominal and cardiac conditions as well as failure of the examining physician to keep in mind the possibility of an acute pancreatitis.

Inflammations of the pancreas may be divided into two groups: (1) the interstitial or edematous type which is comparatively mild and usually resolves spontaneously, (2) acute pancreatic necrosis, of which acute hemorrhagic and suppurative pancreatitis are varying degrees of the same process. In the latter division there is destruction of the gland parenchyma, probably due to minute rupture of the ducts and consequent tryptic digestion.

Acute pancreatitis of the interstitial type may subside or progress into the more serious necrotic form. Quick[1] has described a case of interstitial pancreatitis found at operation. Death occurred two days later and extensive necrosis of the gland was found at autopsy. In my own case acute edematous pancreatitis was found first, and later extensive necrosis of the gland.

CASE HISTORY

A thin, wiry male, 42 years of age, entered the hospital October 1, 1940, with excruciating epigastric pain going through to the back. His face was flushed and perspiring. The abdomen was boardlike and diffusely tender in the upper half. There was no audible peristalsis. Temperature 95°, pulse 68, respiration 17. Hemoglobin 75 per cent, red blood cells 3,880,000, white blood count 6,200.

History. Two years previously he was brought to the hospital at night with a picture similar to the present one.

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*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

[1] Quick, B.: Acute Pancreatitis. Australian & New Zealand J. Surg., 2:115-132, Oct. 1932.

He gave a history at that time of six months of mild indigestion relieved by diet and soda. The abdomen was boardlike and, with preoperative diagnosis of acute perforated ulcer, the abdomen was opened. There was no fluid in the peritoneal cavity and no perforation was found. The gastrocolic omentum was edematous as was the transverse mesocolon down to the ligament of Treitz. The gallbladder was thin walled and of normal color. No stones were palpable either in the gallbladder or common duct. There was no fat necrosis. The gastrocolic omentum was opened and the posterior wall of the stomach and pancreas inspected. Blood vessels over the pancreas were slightly dilated, and the overlying peritoneum extending into the mesocolon was water logged.

By lifting up the abdominal wall the appendix could be seen, but could not be delivered. Its tip appeared inflamed and gangrenous, so the upper abdominal incision was closed and the appendix easily removed through a McBurney incision. The postoperative diagnosis was acute interstitial pancreatitis and carcinoid of the appendix.

During the following two years the patient had twelve to fifteen attacks of severe abdominal pain, located usually in the left upper quadrant, often going through to the back. These bouts of pain lasted from fifteen minutes to several hours. Various types of therapy were tried without success. I had considered removing his gallbladder and draining the common duct, but with the operative findings and subsequent negative roentgenograms, did not feel this was justified.

For a week previous to his second admission the patient had complained of varying degree of epigastric discomfort, until he was suddenly seized with the severe pain which brought him to the hospital. In view of my previous experience with this man, I felt that his trouble would subside with decompression, nothing by mouth, morphine and intravenous glucose. Roentgenograms for gas under the diaphragm were negative.

Hospital course. The following day his temperature had risen to 101.4°, pulse 118, and white blood count 23,700. The abdomen was still rigid, but peristalsis was present. Blood amylase was normal. During the next three days his condition gradually improved, temperature dropping to around 100°, white blood count to 7,700. Small feedings were started by mouth. For the next seven days his condition remained unchanged, fever continuing as well as moderate upper abdominal pain and rigidity.

Consultants agreed with the diagnosis of acute pancreatitis and felt his condition was fairly well stabilized, so that on the eleventh hospital day the abdomen was opened. A large doughy mass was felt in the head of the pancreas, a portion of which protruded between the duodenum and antrum of the stomach. Fat necrosis was present. The gallbladder was thickened, edematous, and several small stones could be felt.

The gallbladder was removed and the common duct explored with negative findings. A number 12 catheter could be run easily through the ampulla. A T tube was placed in the common duct. A soft area in the pancreas protruding between duodenum and stomach was probed with the finger and a small amount of watery necrotic material obtained. A Penrose drain was placed here and one into the lesser peritoneal cavity. A transfusion of 600 cc. of blood was given.

The postoperative course was moderately stormy, but he progressed satisfactorily except for an unaccountable fever for two and a half weeks. Having heard reports of a fever persisting with the presence of a T tube, this was removed after intermittent clamping, and within two days his temperature became normal.

It is now three and a half months since his operation and to date he has remained free from symptoms.

ETIOLOGY

Practically all writers on the subject are agreed that gallbladder disease is a frequent accompaniment of acute inflammations of the pancreas. Dragstedt[2] has reported 60 per cent with definite associated disease of the biliary tract. Cole[3] has reported its association in all of his cases. Reiche[4] reports 134 cases from Germany, in which there was a history indicative of gallbladder disease in all except one patient.

There is not general agreement as to the mechanism which associates the two diseases. Some have attributed extension of infection of the gallbladder to the pancreas by direct lymphatic spread. Others have attributed involvement of the pancreas to blockage of the duct of Wirsung by stone and still others to a reflux of infected bile into the pancreas made possible by anomalous arrangement of the ducts entering the ampulla of Vater. Others have recently brought forth the theory that pancreatic reflux may cause an acute cholecystitis, a possible cause of the cholecystitis in my case.

Rich[5] believes that hyperplasia of the ductal apparatus of the pancreas may produce sufficient back pressure to cause minute rupture of the lining endothelium and consequent digestion of the gland by trypsin.

Blockade of the duct of Wirsung by lodgement of a parasite such as the head of a tapeworm has been reported, associated with acute pancreatic necrosis. The same mechanism is involved in blockade of the duct by pancreatic calculi. Penetrating gastric and duodenal ulcers are also known to have produced acute pancreatitis on rare occasions.

SYMPTOMS

Pain of an extremely severe nature, usually in the left upper quadrant and going through to the back, is the most constant complaint. This is most apt to occur sometime after a full meal. If the patient gives a history of gallbladder disease with pain under right costal margin and then is siezed with pain under left costal margin, it should arouse a suspicion of acute pancreatitis. Tenderness in the left costovertebral angle is also of some diagnostic importance. There is usually nausea and vomiting. As a rule the vomitus, according to Reiche, contains little or no bile.

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[2] Dragstedt, L. R., Haywood, H. E. and Ellis, J. C.: Pathogenesis of Acute Pancreatitis. Arch. Surg., 28:232-291, Feb., 1934.

[3] Cole, W. H.: Treatment of Acute Pancreatitis; Collective Review. Internat. Abstr. Surg., 67:31-38, July, 1938.

[4] Reichl, E.: Symptoms and Treatment of Acute Pancreatic Necrosis. Arch. f. klin. chir., 197:428, Nov. 15, 1939.

[5] Rich, A. R. & Duff, G. L.: Experimental and Pathological Studies on Pathogenesis of Acute Hemorrhagic Pancreatitis. Bull. Johns Hopkins Hosp., 58:286-306, April, 1936.

One of the striking findings is the extreme shock that severe grades of pancreatitis may produce. Marked cyanosis or a peculiar slatey appearance of the patient has been frequently commented upon as peculiar to pancreatitis. This has been explained by some as due to absorption of split protein products, the result of tryptic digestion. A more likely explanation is irritation of the solar plexus with resulting splanchnic dilatation, thus throwing the patient into shock.

Morton[6] has reported the presence of jaundice in one-third of his cases, but this seems to be a higher incidence than generally is observed.

In acute pancreatic necrosis rigidity may be extreme, in which case diagnosis of ruptured peptic ulcer is usually made. Rigidity may be of minor degree, or may not be present but may be replaced by distension of the abdomen due to an associated ileus, or may be followed by ileus in the latter stages of the disease. Tenderness is usually quite marked over the pancreatic area. The temperature at first may be subnormal and later elevated.

There are two signs that are noted in the diagnosis: Cullen's[7] sign which is a bluish discoloration about the navel, and Gray-Turner's sign which is a bluish discoloration in the flanks. The symptomatology and physical findings are not usually sufficiently clear to make an accurate diagnosis of acute pancreatitis.

DIAGNOSIS

It is only with aid of the laboratory that we can make a diagnosis with any degree of positiveness. The serum amylase is now looked upon as probably the only positive diagnostic finding.

Schlesinger[8] first noted in dogs a prompt rise in serum amylase on ligation of the pancreatic duct. On the other hand, if pancreatectomy was done, there was a definite fall in the blood amylase. Therefore, he concluded that the rise in serum amylase was due to absorption of this substance from the gland. During the past few years there has been a number of reports by such observers as Elman, Arneson and Graham,[9] Branch and Zollinger,[10] Morton and others, indicating the value of testing the serum amylase. Probably the most satisfactory test for amylase in either serum or urine is that devised by Somogyi. This measures "units" of amylase by means of an elaborate titration formula. Normal values for serum are 70 to 180 units. In cases of acute pancreatitis, the serum amylase rises rapidly during the first six hours, but also falls rapidly after seventy to eighty hours. The urinary diastase is also reported to give similarly reliable results.

The acute necrotic type of pancreatitis is always associated with a marked leukocytosis. Another rough guide has been variation in blood sugar from hour to hour, dependent upon the severity of the destructive process in the pancreas. It has been noted that, if the blood sugar goes over 300 mg., the outcome is usually fatal.

There is also considerable disturbance in the electrolytes of the blood. Potassium is reported to be elevated and by some is considered to be the cause of toxicity in these patients. Usually sodium and the chlorides are decreased and there may be definite decrease in the blood plasma.

DIFFERENTIAL DIAGNOSIS

Conditions most difficult to differentiate from acute pancreatitis are ruptured ulcer or gallbladder, acute cholecystitis, coronary thrombosis, intestinal obstruction, mesenteric thrombosis and occasionally ruptured appendix.

Use of the roentgen ray for determining the presence of gas under the diaphragm, a flat film of the abdomen for determining the presence of intestinal distention and use of the electrocardiograph to rule out coronary thrombosis are valuable aids in establishing the diagnosis.

TREATMENT

In the acute interstitial type of pancreatitis there is fairly general agreement that conservative treatment is the method of choice. In this type the symptoms are usually of a mild degree so that one is not impelled to do emergency surgery. Conservative treatment should be applied with a knowledge of the disturbed physiology. Food by mouth is contraindicated as this stimulates the pancreas to further secretion. Gastric suction is of distinct value in relieving pain as it reduces pressure within that area. Intravenous use of sodium chloride may probably be gauged by the estimated loss of sodium chloride by vomiting. Intravenous glucose with insulin is also indicated. Morphine may be given in sufficient doses to relieve pain.

After subsidence of the attack an investigation of the biliary tract should be made, and if disease of the gallbladder is found, correction of this offers considerable promise of preventing future attacks of pancreatitis.

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[6] Morton, John J. and Widger, Stanley: Diagnosis and Treatment of Acute Pancreatitis. Ann. Surg., 111:851-860, May, 1940.

[7] Fallis, L. S.: Cullen's Sign in Acute Pancreatitis. Ann. Surg., 106: 54-57, July, 1937.

[8] Schlesinger, W.: Ueber den Ursprung des diastatischen Fermentes im Blute und über Seine Beziehungen zum Diabetes Mellitus. Deutsche med. wchnschr., 34:593-595, 1908.

[9] Elman, R., Arneson, N. and Graham, E. A.: Value of Amylase Estimation in Diagnosis of Pancreatic Diseases; Clinical Study. Arch. Surg., 19:943-967, Dec., 1929.

[10] Branch, C. D. and Zollinger, R.: Value of Blood Diastase in Diagnosis of Common Duct Stone. Am. J. Surg., 41:233-237, Aug., 1938.

In management of acute pancreatic necrosis there is not the same unanimity of opinion. One of the greatest difficulties in the past has been that of making an accurate diagnosis. However, even with a diagnosis, there have been a number of surgical procedures for the acute case. Incision of the pancreas is no longer recommended as it is now realized that simple incision is an ineffective method of draining this organ. Drainage of the lesser sac is certainly not harmful and may be of some value.

Cholecystotomy is probably the safest method of decompressing the biliary apparatus during an emergency. Cholecystectomy at this time is definitely more dangerous. Choledochotomy is probably more efficient as a method of decompression of the biliary tract, but is also somewhat more dangerous.

As the radical method of treating acute pancreatic necrosis has carried an average mortality of 50 per cent, it has discouraged a large group of surgeons who have become more conservative and are practicing delayed surgery when the diagnosis can be established. Certainly statistics favor the advocates of conservative treatment. Conservative therapy consists of that outlined above for treatment of acute interstitial pancreatitis except that more importance is attached to balancing the electrolytes and blood plasma.

Mikkelson[11] has reported 39 cases in which delayed surgery was done with a mortality of 7.5 per cent. Previously, with immediate surgery his mortality had been 78 per cent. Demel[12] reports a mortality of 26 per cent in a group in which he operated only on cases which were not diagnosable.

When the delayed method of attack is used, the operation of choice becomes cholecystectomy with drainage of the common duct if this is indicated. Indications are the usually accepted ones. Personally I feel that drainage of the common duct is probably indicated in every case.

Simple drainage of the gallbladder does not prevent recurrence of attacks of acute pancreatitis. A question may arise as to the advisability of removing the gallbladder because of its possible need for internal anastomosis, if subsequent jaundice should develop. Jones[13], in an extensive experience, has never found it necessary to use the gallbladder for intestinal anastomosis in this type of case.

There has been no general agreement as to the length of time necessary to drain the common duct. Some advocate a long period of drainage, while Cole sees no reason why the common duct should be drained for more than three or four weeks.

SEQUELAE

There are a number of sequelae of acute pancreatic necrosis which are of some interest. Probably the majority of pseudopancreatic cysts are results of previous attacks of pancreatic necrosis. A residual abscess may follow acute pancreatic necrosis and require drainage.

Diabetes is said to develop in 11 per cent of cases recovering from acute pancreatic necrosis[13]. An hepatopancreatic syndrome, first described by Whipple[14], may sometimes follow extreme destruction of the pancreas. This is characterized by anorexia, weakness and loss of weight, nausea and pallor. The symptoms usually develop slowly. The work of Dragstedt[15] may be of significance in this group of cases as it is quite possible that lack of lipocaic and consequent fatty infiltration of the liver is the cause of this condition.

CONCLUSIONS

1. Acute pancreatitis is not as rare a disease as previously was believed but seldom has been diagnosed before surgery or death. It is important to keep pancreatitis in mind when diagnosing acute upper abdominal disturbances.
2. It has become increasingly evident that serum amylase studies of the blood are a valuable aid.
3. Conservative therapy offers the lowest mortality rate in both types of pancreatitis.
4. Later surgery of the biliary system offers a chance of permanent relief in those cases in which there is gallbladder disease. A case is presented in which delayed surgery was followed by recovery.

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[11] Mikkelson, O.: Pancreatitis Acuta. Acta chirg.Scandinav., 75:373-415, 1934.

[12] Demel, R.: Umstrettene Fraen bei akuter Pancreasnekrose. Wein. Klin. Wchnschr., 49:1273. Oct. 16, 1936.

[13] Schumaker, H. B.: Acute Pancreatitis and Diabetes. Ann. Surg., 112:177-200, Aug., 1940.

[14] Whipple, A. O.: Pancreatic Asthenia as Postoperative Complication in Patients with Lesions of Pancreas. Ann. Surg., 78:176-184, Aug., 1923.

[15] Dragstedt, L. R.: Present Status of Lipocaic. J.A.M.A., 114:29-33, Jan. 6, 1940.

SUBPHRENIC ABSCESS*

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Subphrenic abscess was first described by Barlow[1] in 1845. It is a fairly common condition and the mortality has been extremely high in the past, from 30 to 75 per cent in those treated surgically and up to 100 per cent for those untreated. Undoubtedly there are many minor infections in the upper abdomen which go on to spontaneous recovery without having been diagnosed. Herein we are concerned with those infections which go on to abscess formation to the degree that the patient is losing ground daily in spite of the usual supportive methods.

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*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

[1] Barlow, G. G.: Perforation of Stomach with Obscure Symptoms. London M. Gaz., 36:13-16, 1845.

Abscesses in and about the lower abdomen and pelvis are most readily discovered by abdominal palpation, pelvic and rectal examinations. The upper abdomen, encased as it is in the considerable portion of thoracic cage and comparatively inaccessible because of the rather large and important organs situated therein, makes diagnosis often difficult, to say nothing of determining probable location of the abscess itself.

Broadly speaking, subphrenic abscess applies to those located between the diaphragm above and the transverse colon and mesocolon below. Therefore, they may be above the liver and just under the diaphragm or they may be just under the liver. Again, they may be in the lesser peritoneal cavity or in the region of the spleen.

The classification as given by Moynihan[2] appeals to me as being simple and sufficiently descriptive as to location. Anterior or posterior suprahepatic and infrahepatic, right or left or retroperitoneal. It must be borne in mind that the abscess may be of sufficient size to involve a large area or there may be several distinct ones, for instance, a walled off suprahepatic and a walled off infrahepatic.

The suprahepatic space is divided into right and left by the falciform ligament and this area again divided into anterior and posterior by the right and left coronary ligament. The left coronary ligament follows along the posterior border of the left portion of the liver, leaving therefore only one real suprahepatic space on the left, the anterior space. What corresponds to the left posterior space is really the upper portion of the lesser peritoneal cavity. The retroperitoneal space is that area enclosed within the limits of the coronary ligament and is bounded above and below by that portion of the diaphragm and liver which is not covered by peritoneum.

Statistics vary, but I think it would be fair to say that the greatest number of subphrenic abscesses would follow that condition which produces the greatest number of intraabdominal supppurations. It would seem, therefore, that suppurating appendices would be the greatest single cause, the infection spreading along the lateral abdominal wall to the upper abdomen. The second most common cause would be ruptured peptic ulcers and, should the perforation be into the lesser peritoneal cavity, the abscess would in all probability be located in it.

In the way of prevention too much cannot be said in favor of early intervention in suppurative lesions within the abdomen and very careful technic in any operative procedures in the upper abdomen. Truesdale[3] has a firm conviction that most of the subphrenic infections are carried there through the lymphatics rather than by direct extension.

Diagnosis is dependent upon a long continued fever and leukocytosis, following some intraabdominal infection, elevation of the diaphragm which is generally immobile and is readily discovered by roentgen examination. If the condition persists for some time, evidences of pleurisy with friction rub may develop on the affected side. Later, exudate may develop in the pleural cavity which makes diagnosis as to the original cause rather difficult. In other words, the pleural cavity exudate may be mistaken for a primary empyema and treatment be directed only at that condition. According to Ochsner,[4] should the abscess be in the postsuperior space on the right side, there is most often localized tenderness over the tip of the twelfth rib which is constant. Later an edema may develop over the side affected.

Formerly considerable exploration by means of needle punctures was done with an attempt to locate the site of the infection. This procedure is now hardly advisable in view of less dangerous methods available.

One method of drainage in the past has been the transpleural approach, having to use a two stage operation, the first attempting to make the diaphragmatic pleura adherent to the chest wall and some few days later going in through this adherent area to the abscess, in that way avoiding the lung or free pleural cavity. It appears that the great number of times the pleural cavity was infected left the mortality and morbidity only moderately less than where no drainage was attempted.

There has been the approach which was below the twelfth rib, exploring by means of needles and manually through that opening. Should the abscess be anterior and definitely pointed to the epigastrium, the drainage was considerably simplified.

Nather and Ochsner[5] have popularized the extraperitoneal approach. The commonest method is removing the twelfth rib subperiostially on the affected side. An incision is then made at the level of the first lumbar spine beginning one and a half inches lateral to the vertebral column and extending down to the kidney fascia. This incision, transversing the outer portion of the bed of the twelfth rib, provides means of finger dissection of the peritoneal covering of the diaphragm as the finger advances. When an abscess is met with, the finger easily punctures into it, the peritoneum being very friable at that point.

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[2] Moynihan, Sir Berkley: Subphrenic Abscess, Chap. VII, Vol. I, Abdominal Operations, pp. 162-178.

[3] Truesdale, P. E.: Origin and Course of Infection in Subphrenic Abscess. Ann. Surg., 98:846-854, Nov., 1933.

[4] Ochsner, A.: Subphrenic Abscess. New Orleans M. & S. J., 81:102-111, Aug., 1928.

[5] Nather, C. and Ochsner, A.: Retroperitoneal Operation for Subphrenic Abscess. Surg., Gynec. & Obst., 37: 665-673, Nov., 1923.

Should no collection be discovered anywhere about the liver, the dissection may be carried downward and oftentimes pus may be found retrocecally. When the abscess is perirenal, it will be readily discovered through this same incision. If the abscess is anterior, a costal incision over the upper abdomen may be carried down to the peritoneum and there again the same procedure of exploration carried out without entering the uninfected peritoneal cavity.

All untreated cases reported have varied in mortality rate from 50 to 100 per cent. The operative cases have fared somewhat better, indicating that when the patient was sufficiently ill with a localized abscess almost any method of drainage promised a more hopeful outlook than noninterference. Inasmuch as Nather and Ochsner have popularized an extraperitoneal approach, which in their hands has brought their mortality to about 6 per cent, this in itself would justify their procedure.

My own experience has been limited to four cases, in which the posterior right side approach as described by Nather and Ochsner has been utilized. In three cases I was able to locate a definite abscess, one being perirenal. In the fourth case the abscess was not definitely located, but on discovering a foul smelling colon odor I packed the wound with gauze which was followed in a day or two by profuse drainage and subsequent recovery of the patient.

I recall one case, several years ago, of an old man with a ruptured appendix who made a gradual recovery to about the third week, at which time his temperature again began to rise and he remained ill for a period of several weeks, at which time he suddenly died. Postmortem examination revealed a large suprahepatic abscess which, of course, should have been suspected and drained.

CONCLUSIONS

1. Following intraabdominal procedures and suppurating lesions we know there are very often small infections located anywhere in the abdomen which gradually absorb after a rather slow convalescence.

2. It is difficult to state just when a patient's condition justifies exploration for purpose of drainage. This is undoubtedly an individual matter. The choice and time of treatment depend considerably on doctor and patient.

3. In those cases requiring drainage every attempt should be made not to invade or contaminate the uninvolved pleural or peritoneal cavities.

4. Mortality reports in older procedures as compared with the one herein described justifies the adoption of this method.

5. In preparation for this method of approach, careful study of the anatomy on a cadaver and performance of the operation thereon will greatly facilitate the application of this procedure on the living subject.

6. Should the pleural cavity be inadvertently opened before puncturing an infected area, I believe the pleura should be sutured and the procedure not continued until some later time.

SURGICAL INJURY OF THE URETER*

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Of all abdominal operations, those on the female pelvic organs occupy a most important place in considering injuries to the ureter. Salpingitis, ovarian cysts play strange pranks with the normal anatomic landmarks and relationship of the lower third of the ureter. After the ureter leaves the kidney pelvis, it attaches itself to the posterior surface of the peritoneum, then finds its way downward over the brim of the bony pelvis to its termination in the base of the urinary bladder.

The pelvic peritoneum is subject to distortion or displacement, should intraabdominal or intrapelvic tumors develop, and the ureter imbedded in it is thus carried out of its natural course. Large renal cysts, for example, may push a ureter entirely over to the opposite side of the abdomen. Even a skilled surgeon may become confused when he attempts to dissect a frozen tumor mass, whose line of cleavage is buried in a cellulitis. Bands of adhesions and enlarged veins, which may require severing before the entire tumor is accessible, can easily conceal a ureter.

Carl Davis states: "An ovarian neoplasm which grows interligamentously is purely accidental. The ovary, like the tonsil, is part free, part buried. If the tumor starts in the buried half of the ovary, it extends downward between the layers of the broad ligament, lifts the posterior layer, and may strip the

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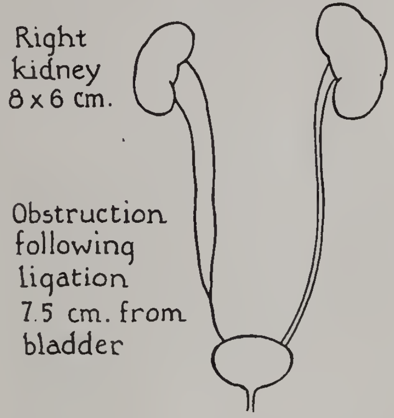
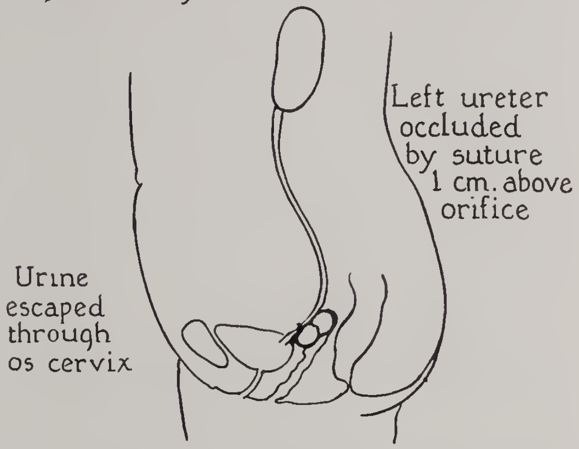
*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

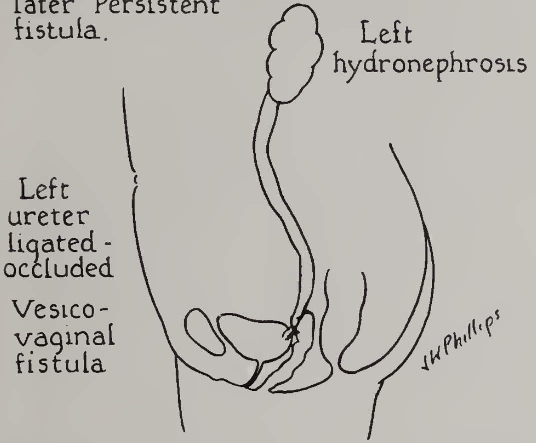
Case 1. Subtotal hysterectomy. Nephrectomy 5 months later Recovery.



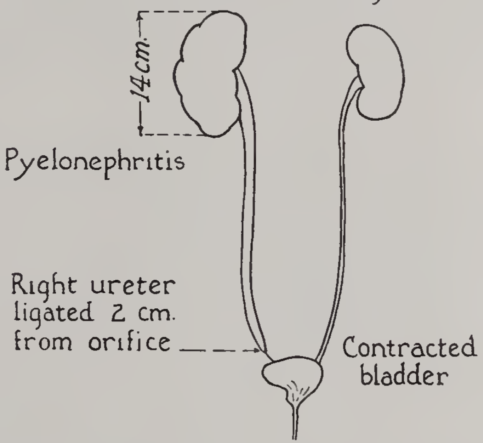
Case 2. Subtotal hysterectomy and right oophorectomy.



Case 3. Total hysterectomy. Nephrostomy after 3 months. Nephrectomy 3 months later Persistent fistula.



Case 4 Total hysterectomy. Nephrectomy 1½ months later. Recovery.



peritoneum off any of the contiguous organs which enroach upon its growth, so that they may at last be covered with the sigmoid, rectum, bladder, mesocolon, and may change the relations of uterus, bladder, ureters and pelvic blood vessels."

Many writers claim that the ureter is injured in three per cent of all cases of female pelvic operations. Yet, when surgical injuries do occur, they are seldom discussed except behind closed doors and more rarely still are they published.

David Feiner collected all cases reported up to April 1938, some 710 in number, 109 bilateral and 601 unilateral. These injuries comprised complete section, partial section and ligation of the ureter. The types of operation, where injury to the ureter occurred were:

Total hysterectomy for cancer	54
Total hysterectomy for myomata	48
Subcervical hysterectomy	26
Complicated chronic adnexal disease	18
Vaginal hysterectomy	35
Salpingooophorectomy	24
Removal of interligamentary cyst	19
Obstruction procedures	6

The following cases were observed by me over a period of twenty years. Urologic consultation was suggested sometimes early and others months after the injury.

CASE REPORTS

Case 1. Ligation of right ureter incident to a hysterectomy. Mrs. W. A. F., age 40, admitted to Columbus Hospital July 28, 1933. Following a pathologic abortion, this woman suffered with subinvolution, pelvic infection and phlebitis for six months. Subtotal abdominal hysterectomy was performed on July 31. Shortly after the operation there was a complaint of pain in the right abdomen and back. The wound healed slowly. Weeks later, a fluctuating mass developed in the wound, which worked through the scar and urine escaped. A period of watchful waiting and hoping ensued to little avail. How easy it is to deceive ourselves.

December 13 the patient was referred for urologic study. The urine was clear. Cystoscopy demonstrated a clean bladder. The right ureter was obstructed at 7.5 cm. from the bladder. No urine and no dye given intravenously came through the right side. The left ureter was unobstructed and gave a rapid flow of clear urine. A right ureterogram showed complete obstruction.

January 3, 1934, a right nephrectomy was performed at Providence Hospital. The kidney measured 8 by 6 cm. To it was attached an enlarged ureter 10 cm. in length. The capsule stripped with difficulty, leaving a granular surface. The cut surfaces of the kidney showed an enlarged pelvis filled with purulent fluid. Throughout the cortex and medulla there were small necrotic areas.

Sections of the kidney showed marked diminution in the number of glomeruli, many of which were destroyed or contracted. The tubules were also obliterated by dense cellular infiltration, consisting of eosinophiles, plasma and round cells. Diagnosis, pyonephrosis with diffuse inflammation of parenchyma. This patient recovered.

Ligation of a ureter may cause few subjective symptoms, provided infection of the ureter or kidney does not occur. In most instances it is fraught with danger.

Case 2. Partial ligation of the left ureter during hysterectomy. Mrs. S. R., age 43, suffered with a pelvic tumor. On May 23, 1932, a substotal hysterectomy and right oophorectomy for a papillary intraligamentous cyst was performed. The dilated right ureter was displaced towards the median line. Convalescence was not marred by any untoward symptoms. Urination seemed to be normal. A year later urine escaped from the vagina; otherwise, there was no complaint. The patient enjoyed average health.

Examination gave height 64 inches and weight 135 pounds. The abdomen presented a large median line, surgical scar. Right kidney was palpable. There was no tenderness through the left abdomen. The pelvis was devoid of uterus and adnexa.

Cystoscopy: Capacity of the bladder was 120 cc. The urine was hazy, specific gravity 1.017, yellow, albumin slight trace, no sugar, no red blood cells, 2 to 10 pus cells, no bacteria. Outside of mild trabeculation, the mucosa of the bladder was normal. No diverticula or fistulae were seen. Both orifices were easily catheterized. The left one had no efflux and was obstructed at 1 cm. Rapid flow occurred from the right side.

The right pyelogram showed no evidence of obstruction. A vaginal examination was made with a speculum. The anterior wall was intact. Through the cervical os was a periodic gush of urine. Apparently there had been an occlusion of the left ureter, by a needle and suture, resulting in total obstruction. After consultation, this patient was lost track of.

Case 3. During hysterectomy for a cervical fibroid, the left ureter was accidentally ligated and a vesicovaginal fistula resulted. Mrs. P. J., age 31, suffered severe menorrhagia and metrorrhagia. After hysterectomy in January, 1939, a pelvic cellulitis developed. Frequency of urination and leakage of urine from the vagina added to her troubles. At this time pain in the upper left abdomen and back with fever suggested renal infection. The left ureter was occluded near the bladder.

In April, 1939, a left nephrostomy gave her relief. Gradually the pelvic inflammation subsided. Urine from the left nephrostomy, however, showed a chronic infection. On account of pain from the nephrostomy wound a left nephrectomy was performed July 29. The kidney was extensively infected, hydronephrotic, and the ureter hopelessly occluded. This wound healed in the usual time.

December 2 an attempt was made to heal the vesicovaginal fistula. Cystoscopic examination showed the right orifice functioning one millimeter from the vesicovaginal fistula. The fistula was two millimeters in diameter and in the midline. From the vaginal side, the fistula was larger. The vagina itself was narrow and deep, the os uteri replaced by a scar. Only a limited dissection was possible. Two rows of mattress sutures were used to close the fistula. Stainless steel wire was employed. The wound held until the fourteenth day, when the sutures were removed. A smaller fistula persisted. Six attempts have been made to close this leak both vaginally and suprapubically, without success.

Case 4. A ureterovaginal fistula following hysterectomy. Miss D. P., age 42, beauty parlor operator. Twenty years ago this patient had the appendix, right ovary and tube removed. Since then she has had many attacks of pelvic inflammation.

On August 8, 1939, she underwent hysterectomy. Her surgeon related that he encountered innumerable fibroids in the greatly enlarged uterus and broad ligaments.

Cystoscopy: The bladder was contracted with an irregular fold in the base, the mucosa was inflamed. The right ureter was obstructed at a point 2 cm. from the orifice. No dye came through this side. The left ureter was apparently normal. Excretion urography on two occasions failed to show function in the right kidney.

The walls of the vagina were relaxed. At the vault urine was escaping in drops, but no fistula could be demonstrated in the scar.

On September 22, 1939, a right nephrectomy was performed. The kidney was 14 cm. long. The pelvis was only slightly dilated. Microscopic findings were those of a parenchymatous degeneration of the kidney with miliary abscesses.

Gradually the cystitis subsided, the bladder capacity returned to normal and perfect control of micturition was achieved. In this case there was a ligation of the ureter, a ureterovaginal fistula and resultant infected degenerated kidney. Recovery resulted.

Case 5. This woman presented a real problem, injured right ureter and functionless left kidney.

Mrs. A. M., age 62 years. December 20, 1934, a radical hysterectomy was performed for carcinoma of the uterus. The abdominal wall was unusually heavily padded with fat, making pelvic exposure difficult. The patient had not done well. Anuria gave alarm. At 4:00 a.m. on the second postoperative day urologic consultation was called.

When first seen by the urologist, the patient was on the operating table, etherized and ready for exploration. There was a long surgical incision well sutured. This incision was widely opened. The intestines were displaced into the upper abdomen and the pelvis well exposed. Ends of the round ligaments were located and a number of chromic sutures removed. There were only a few small blood clots. No urine was seen.

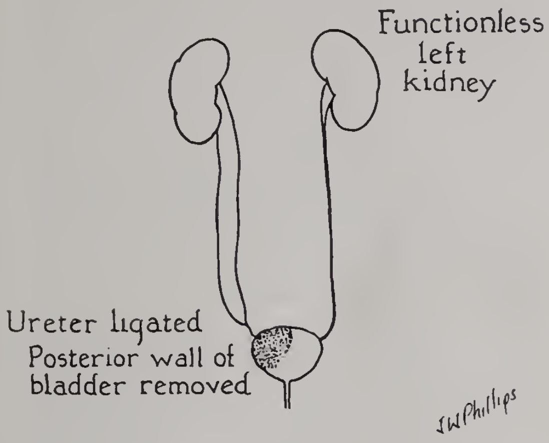
The right ureter greatly dilated was approached by an incision of the peritoneum, lifted up and dissected downward, after the removal of more sutures. The ureter was opened and a No. 6 ureteral catheter was passed downward. The end of the catheter appeared in the wound, as part of the posterior wall of the bladder had been removed. The left orifice was now located and a filiform tipped catheter passed into it for two centimeters, encountering an atresia and functionless ureter. At this point of the exploration the patient went into deep shock and died on the table.

In dissecting out this tumorous uterus, part of the bladder wall had unwittingly been removed and the ureter of a solitary functioning kidney was ligated. To this condition was added surgical shock. These accidents preach their own sermon and need no further comment.

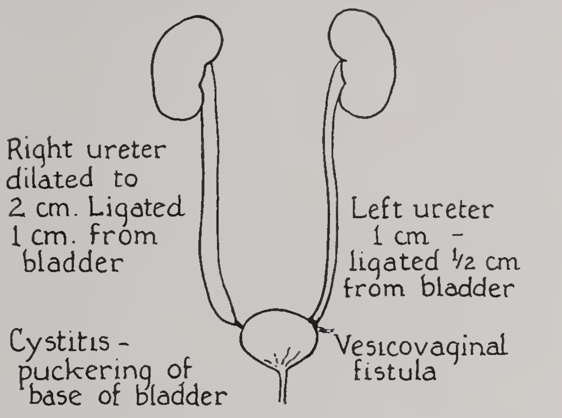
Case 6. Cystocele repair with bilateral ligation of the ureters treated by nephrostomy. Mrs. A. M., age 60, admitted to Providence Hospital March 9, 1938. A classic repair of the anterior vaginal wall had been made, and an indwelling catheter inserted into the urethra. When no urine was obtained diuretics and intravenous fluids were administered. After forty-eight hours, urologic consultation was requested.

Sequence. Cystoscopy showed a puckering of the base of the bladder. The ureteral orifices could not be identified, due to edema. On March 10, ten ounces of urine were ob-

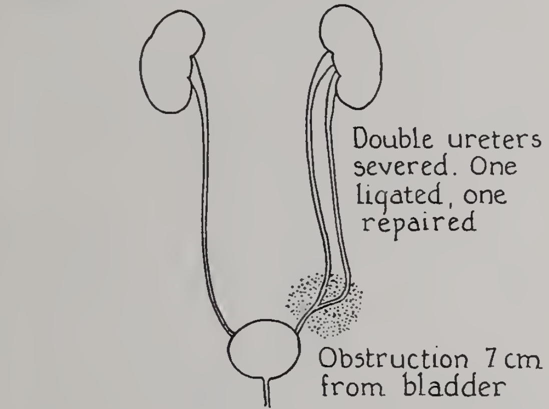
Case 5 Radical hysterectomy. Death



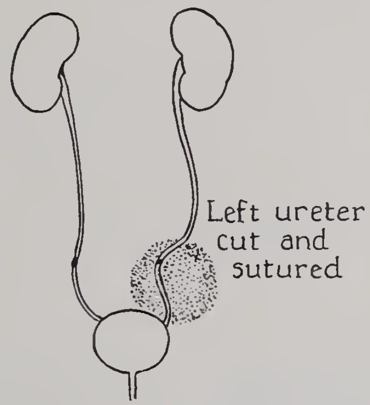
Case 6 Cystocele repair - Nephrostomy
Persistent small fistula



Case 7 Bilateral salpingectomy
Nephrectomy 2 months later Recovery



Case 8 Interligamentous cyst removed.
Nephrectomy 6 weeks later Death



tained by catheter. The blood chemistry: urea nitrogen 61.8 mg., creatinine 4.6 mg., and chlorides 376.2 mg. Hot packs over the kidneys and intravenous saline were continued.

On March 16 another cystoscopic examination was made. Again the ureteral orifices could not be visualized. A diagnosis of bilateral ligation of the ureters was made.

Using gas and ether anesthesia, a bilateral pyelotomy was done on the sixth postoperative day. The right ureter was found dilated to two centimeters, the left was one centimeter in size, and bulging renal pelvis.

During the next twenty-four hours, 5000 cc. of urine were collected through the nephrostomy tubes. Immediate improvement was noted. The output remained well above average. On March 23 sutures of the anterior colporraphy were removed with an idea of freeing the ureters. At this time another attempt was made to catheterize the ureters. The orifices could now be located. No efflux or contraction was seen. The right ureter was obstructed at 1 cm. and the left at 0.5 cm. from the bladder.

On March 25 the patient began to void a small amount of urine. At this time the nephrostomy tubes were removed. On March 29 a vaginal examination demonstrated a vesicovaginal fistula. An attempt to repair it on October 8 was partly successful. A pin-hole fistula still persists, though leakage is controlled by a sponge rubber tampon.

In reviewing this case two lessons are learned. (1) The ligation of ureters should have been discovered earlier and sutures of the perineal repair removed immediately. (2) The function of the kidney can be reestablished after two weeks ligation.

Case 7. Accidental division of ureter, end-to-end anastomosis. Mrs. R. M., age 29, admitted to hospital March 10, 1931, for bilateral salpingectomy. The surgeon was faced with a pelvis filled with an inflammatory mass. He stated that the ureters ran along the top of the broad ligament. On the left side a double ureter was severed before recognition. One was ligated and the other repaired by a cuff end-to-end anastomosis. On the third postoperative day, urine began to flow through the abdominal wound. Voiding from the bladder was normal except for the amount.

Cystoscopy was done. The right orifice was functioning and easily catheterized. Clear urine was collected. Only one left orifice could be found, the ureter dividing after leaving the bladder. The left ureter had an impassible obstruction at a point 7 cm. from the bladder and no urine was obtained.

Due to secondary anemia (15 per cent hemoglobin), operation was deferred until May 20. Scar tissue about the ureter made any treatment but nephrectomy ill advised. These patients want permanent relief. Nephrectomy is often the better choice, if there is one good functioning kidney. This patient recovered her health.

Case 8. Division of left ureter, immediate repair. Mrs. H. P., age 46, housewife. On June 8, 1939, a large, interligamentous cyst was removed. Severing the left ureter was immediately recognized. It had been mistaken for the uterine artery. A small rubber catheter was passed into the proximal end to the kidney pelvis and the distal end passed into the bladder, thus splinting the cut ureter. Ends of the cut ureter were held together by interrupted sutures. No drains were used. Shortly after the operation, urine drained from the abdominal incision.

Examination: An obese woman with recent abdominal incision, draining urine. There was no tenderness in either costovertebral angle. The temperature chart recorded a low grade fever.

Cystoscopy: A No. 24 Brown-Buerger passed into the bladder easily. The ureteral catheter was removed from the bladder with rongeurs. The left ureter was obstructed. Continued renal infection and fever made the patient so ill that nephrectomy was performed six weeks later. This patient succumbed to infection.

CONCLUSIONS

1. Many surgical injuries to the ureters occur and for obvious reasons are seldom reported.
2. The possibility of accidental ligation of the ureter in all pelvic surgery should be kept in the surgeon's mind.
3. Any suspicion of ureteral injury should be investigated early by retrograde catheterization of the ureter or excretory urograms.
4. The commonest injury is unilateral ligation, 63 per cent.
5. Incision or severing of the ureter occurs in 25 per cent of ureteral injuries.
6. Sixty-three per cent of these accidents are associated with interligamentous cysts, cancer and large fibroids.
7. The best treatment is early nephrostomy and, if necessary, nephrectomy later.
8. These injuries are serious. Convalescence is protracted for those who recover. The mortality is 25 per cent.
9. Ligation of the ureter is usually accompanied by renal infection, contrary to some teaching.
10. These injuries can occur, even with skillful and experienced surgeons.
11. Keen surgical perception is needed to detect and repair these injuries at the time of their occurrence.

FEMORAL ARTERIOVENOUS ANEURYSM*

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The lesion, arteriovenous aneurysm, owing to its spectacular quality and comparatively rare occurrence, always excites more than a passing interest. The World War, with its unprecedented incidence of vascular injury, afforded ample opportunity for study of immediate and remote developments, arising from this particular condition, and it is quite possible that these present conflicts will lead to further developments in this field.

William Hunter, in 1757, recognized and described the local physical findings in arteriovenous fistula, but it was not until 1918 that Matas, Reed and others called attention to the fact that this could be treated surgically. Even Osler stated that this was a nonsurgical condition and his patient always died of heart disease, the relationship having escaped him.

DIAGNOSIS

Aneurysms have developed from sepsis but usually occur following trauma such as a stab or gunshot wound. It is often overlooked at the time of the original injury and later develops into a large, pulsating tumor. Obeying the maxim that flowing water seeks the path of least resistance, a larger and larger volume of blood will find its way into the vessel and through the fistulous opening, thus producing by force from the column of blood directed towards the fistula, a gradual distention and dilatation of the feeding artery and the receiving vein. There is an equalization of resistance and the two systems are in equilibrium.[1]

When there is a duplicate apex murmur transmitted from the femoral fistula to the heart, it is called a Makin's murmur.[2] Branham first described in 1890 that pressure on the common femoral artery central to the fistula was followed by immediate slowing of the heart beat from 80 to 35, with dizziness and dyspnea until the pressure was relieved. Branham's sign is explained on the basis that pressure obliteration of the artery causes immediate marked dilatation of the aorta, especially at the arch, and stimulates the cardiac depressor nerve.

The thrill and bruit are probably due to the sudden fall of pressure between two conduits as the blood flows directly from the arteries into the veins, producing swirling eddies in the flowing blood which can be easily seen when the communication is opened. These eddies are composed of alternate currents of blood under high and low pressure, which set the edges of the opening into vibration, thereby producing the characteristic thrill and bruit.

ANATOMY

Hunter's canal is wedge-shaped, about 10 cm. in length, in the middle third of the thigh, extending from the apex of Scarpa's triangle to the opening of the abductor magnus. It is bounded laterally by the vastus medialis, medially and anteriorly by the roof, and posteriorly by the abductor longus and mangus. It contains the superficial femoral artery and vein, long saphenous nerve, and anastomotica magna. The arteries are the common, superficial and deep femorals. The long saphenous nerve is the longest branch of the anterior crural, and passes down laterally to the femoral artery.

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*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

[1] Thomason, T. H.: Arteriovenous Fistula. Ann. Surg., 72:293-300, Aug., 1925.

[2] Holman, E.: Arteriovenous Aneurysm. Macmillan & Co., New York, 1937.

Because the superficial femoral artery was ligated in one of our cases just beyond emergence of the deep femoral, little apprehension for the life of the limb was felt, due to adequacy of the deep femoral artery, through its circumflex and perforating branches and their communications with the anastomotica magna about the knee.

The deep femoral artery usually provides an excellent blood supply for the leg and foot. The common, superficial and deep femoral arteries may all be ligated and there may be an establishment of collateral circulation sufficient to nourish the lower extremities, if this is not done too suddenly.

The accompanying diagram (fig. 1), illustrates in black the internal iliac artery which, through the obturator and gluteal and deep circumflex iliac, establish with the communicating branches sufficient circulation to supply the deep femoral and thus continue on to the lower extremity.

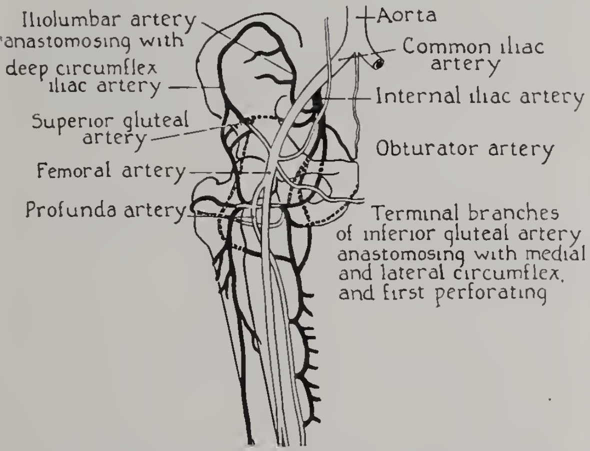
Iliolumbar artery anastomosing with deep circumflex iliac artery
Superior gluteal artery
Femoral artery
Profunda artery
Aorta
Common iliac artery
Internal iliac artery
Obturator artery
Terminal branches of inferior gluteal artery anastomosing with medial and lateral circumflex, and first perforating

Fig. 1. Black shows potential collateral circulation to be established if ligation of the common, superficial, or deep femoral artery is necessary.

Matas[3] feels that the transvenous approach to the fistula and its closure by intravenous suture has proved the most satisfactory. The aim in the treatment is preservation of the artery, the state of the vein being of secondary importance. He states that, when it is clearly demonstrated that the circulation of the peripheral parts is maintained after temporary occlusion of the main artery, or preferably by occlusion of the artery and vein at the site of the fistula, then is the right time to operate. Training the collateral circulation is beneficial by compression of the main artery systematically applied above the lesion, or preferably in the arteriovenous aneurysm at the site of the fistula itself, also with a hot-air cabinet, alternating hot and cold baths in the thigh, in fact, any means of inducing artificial hyperemia[4].

In planning surgical treatment it is wise to be prepared for aneurysmorrhaphy as well as quadruple ligation of the vessels. Essential requisites, as in all operations on the vascular system, must be followed, namely, absolute asepsis, absolute hemostasis and anatomic dissection of tissues.

The past test for determining condition of the collateral circulation consists in exsanguination of the affected limb by application of an Esmarch bandage to the level of the fistula. The femoral vessels and fistula are occluded by pressure. After ten minutes the Esmarch is removed, the pressure over the femoral fistula maintained. If well established, collateral circulation is present; it will be apparent by the hyperemic blood which will flow down over the limb within a few minutes. Without this test it would be hazardous to start operation with the preconceived idea of doing any type of occlusion. Delay of several months or years may be necessary.

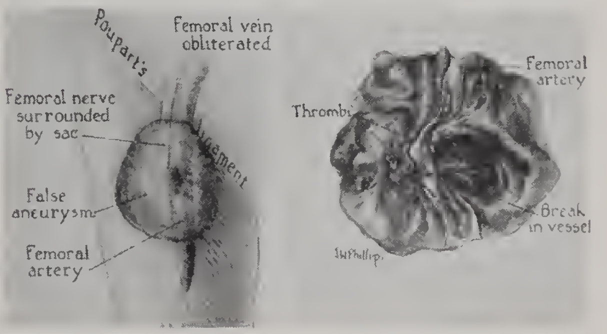

Fig. 2. Lesion pre- and postoperatively.

Case 1. King County Hospital, A. J., colored, age 30. This patient was admitted in November, 1939, with a previous history of venereal disease, diagnosed as gonorrheal. After considerable treatment for this, he suddenly developed pain in the right thigh. On examination a mass was found in the right inguinal region. This mass was expansile in type, and there was a loud systolic murmur over it, with a thrill. It seemed to expand equally in all directions. There were some small palpable glands around this area. An arteriovenous fistula with impaired circulation of the femoral artery was diagnosed. This mass ultimately became consolidated and the patient ran a septic temperature.

In March, 1940, after a period of preparation, the patient was taken to the surgery and an operation was done, with excision of the femoral artery, vein and nerve (fig. 2).

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[3] Matas, R.: Arteriovenous Fistula of Femoral Vessel. S. Clin. N. America, 2:1165-1188, Oct., 1922.

[4] Jackson, R. H.: Radical Operation for Traumatic Arteriovenous Fistula of Femoral Vessels. West. J. Surg., 42:152-162, March, 1934.

Lymph nodes in the femoral triangle and fossa ovalis were enlarged and dirty grey in color. The femoral vessels entered into the superior aspects of this mass, just distal to Poupart's ligament. There was no evidence of pulsation of the vessels as they came out of this mass. The femoral nerve was inescapably enmeshed within the inflammatory mass so that it was impossible to dissect it free.

Postoperatively the patient could extend the leg on the thigh. Muscle imbalance between the flexors and extensors, which was inevitable, caused flexion contracture of the knee. The quadriceps paralysis became complete and there was a flexion contracture of about 15 degrees of an unstable knee. An arthrodesis of the knee was planned after recovery was complete.

The patient was able to get around fairly well on crutches. Later he developed toxemia, although cultures were negative, sputum negative for tuberculosis, no gonococci found, and complement fixation test doubtful. He developed a pulmonary infection and died on August 31. The diagnosis was endocarditis, probably gonorrheal in origin. Postmortem examination was refused.

Case 2. E. W., white male, age 28. He was shot in the right thigh years before examination, with a 38 calibre pistol. The bullet entered the upper lateral aspect of the right thigh, with point of exit being at the lower portion on internal aspect of the thigh. The bullet lodged behind the left knee joint in the popliteal space. There was no infection at the time, but a large amount of bleeding occurred. He was treated by application of dressings.

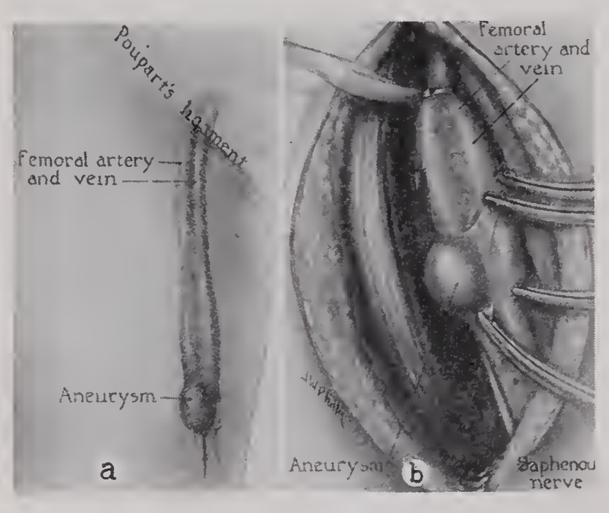

Fig. 3. a. Site of arteriovenous aneurysm. b. Appearance at time of operation.

Since that time he has noticed there was gradual increase of bulging of the middle inner aspect of the thigh. This was a pulsating type of bulging, with numbness developing in the outer side of the right leg. He stated that it had affected his heart and he was unable to do as much work as formerly. He had been married five years, has one child aged fifteen months, and his wife is living and well.

On the right side there was a definite pulsating mass in the upper middle third of the inner anterior aspect of the thigh. On palpation a definite thrill and bruit were noted which extended over this area along the course of the femoral artery and vein about 25 cm. in length. There was also definite pulsation in the right inguinal region in the lower end of the iliac. On pressure over this inguinal region so that the aneurysmal pulsation stopped, blood pressure rose to approximately 165/110, and the pulse slowed. There was mottling of the skin on the lower leg. There was some contraction of the big toe on the right, but no trophic ulcers. The hemoglobin was 106 per cent on admission, and blood Wassermann negative. It was noted that his dorsalis pedis pulse was maintained even when sufficient pressure was exerted proximally to obliterate pulsation of the aneurysm.

Operation. Under spinal anesthetic the aneurysm was exposed with the vessels above and below. An Esmarch bandage and tourniquet were not used because of the possible damage to his heart. Tapes were employed around vessels proximal and distal to the lesion before excising it. Hemorrhage from the multitudinous vessels around the lesion was nature's contribution to relief of cardiac embarrassment. The vessels were triply ligated and the wound closed.

Postoperative course was uncomplicated except for moderate drainage from the wound (fig. 3). The bullet was removed from the opposite knee. The patient returned to his former occupation as a cook with relief of cardiac symptoms and no swelling of the leg. Roentgenograms showed obvious decrease in size of the heart.

SUMMARY

Arteriovenous fistula causes marked fall in blood pressure and decrease in pulse rate (Branham's bradycardia). These factors, together with greatly increased capacity of the dilated vein, result in a compensatory increase in total blood volume and enlargement of the heart as is well shown in this patient. Myocardial failure is not unusual. Local symptoms of a side-to-side arteriovenous communication are thrill and bruit, which are most intense during systole, and directly over the site of the lesion. There is a possibility that cardiac decompensation may occur from overdistention, therefore, venesection is important, if the diastolic pressure increases after closure of the fistula[5].

Early recognition of injury to the vessels should be recognized and treated. Later, Matas aneurysmorrhaphy is desirable but quadruple ligation is more often surgically practical.

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[5] Jackson, C. and Babcock, W. W.: Arteriovenous Communication Between Femoral Artery and Vein. S. Clin. of N. America, 10:6:1279-1283, Dec., 1930.

REHABILITATION AFTER RADICAL LOCAL RESECTION OF BONE TUMORS*

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Certain bone tumors exhibit little tendency to metastasize to distant points but do have considerable tendency to recur locally after their resection. Chondrosarcoma and osteochondroma are of this type. If the tumor can be completely removed so that no neoplastic cells remain in the part, surgical cure is anticipated.

This can be done most simply by amputation of the part. In the usual small osteochondroma cure is usually readily obtained by removal of the tumor with covering and base intact. In the most exten-

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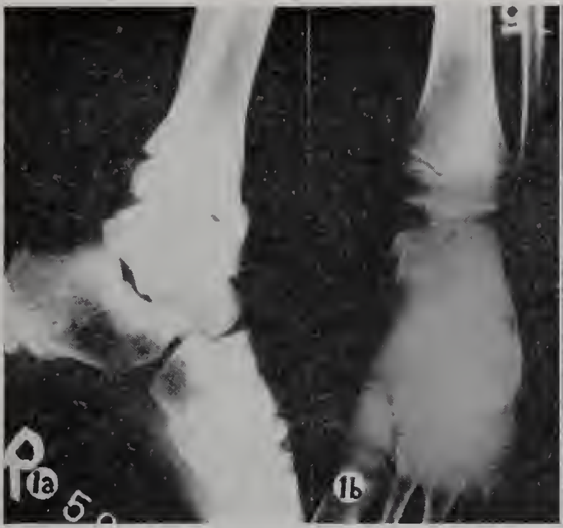
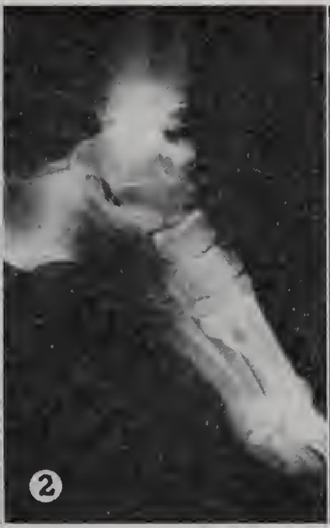
*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.





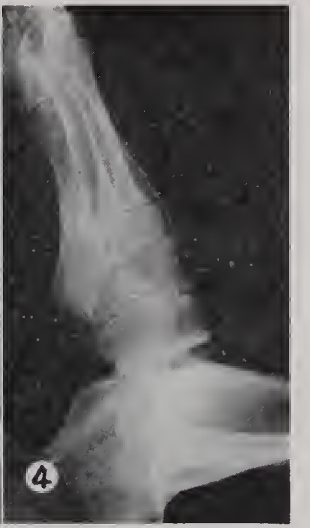


Fig. 1a, 1b. Shows bony mass over astragalus.

Fig. 2. Shows recurrence of growth.

Fig. 4. No recurrence twenty months postoperatively.

sive tumors this cannot be done without either leaving tumor cells behind or removing a considerable quantity of bone with resultant mutilation. I feel very strongly that all tumor cells should be removed in block, if this is possible in cases of this kind.

The following two cases are presented to show what may be accomplished without amputation in extensive bone tumors. While they are yet too early to be classified as end-results, they do present good functional results at the present time and it is hoped and expected that no recurrences will yet appear.

Case 1. R. B. Patient was first seen in 1935 when 9 years of age. There was a history of ankle sprain four or five months previously while skiing. A month previously the mother noticed an enlargement on the inner side of the ankle which grew quite rapidly. Examination revealed an enlargement on the inner aspect of the neck of the astragalus. The foot and ankle were normal except for limitation of dorsiflexion.

Roentgenogram (fig. 1) showed a fairly large bony mass over the astragalus on the medial side and extended proximally apparently involving a portion of the articular surface of the ankle joint. On June 29 a large exostosis was removed surgically from the superior surface of the neck of the astragalus. This was found to be mostly spongy bone and quite hemorrhagic. The pathologic report of this tissue was "sclerotic bone, no tuberculosis."

In April, 1936, the bony growth had recurred and dorsiflexion was again limited. This was again locally resected and the pathologic report of this tissue revealed "low grade malignant chondroma." Amputation was refused and the boy continued with no treatment until April, 1939, when he was again seen. He had continued to walk upon the limb and had little difficulty until he bumped the ankle a week previously. Roentgenogram revealed another recurrence of the lesion (fig. 2) in the same location.

On May 26 radical local resection of the tumor area was performed. Through a Kocher incision the distal one and a half inches of the tibia and the entire astragalus were removed en masse. The upper surface of the os calcis was resected down to cancelous bone to make a flat surface to receive the end of the tibia. The proximal articular surface of the scaphoid was resected to make a buttress against the anterior aspect of the lower end of the tibia. A 3/32 stainless steel pin was driven through the sole into the tibia.

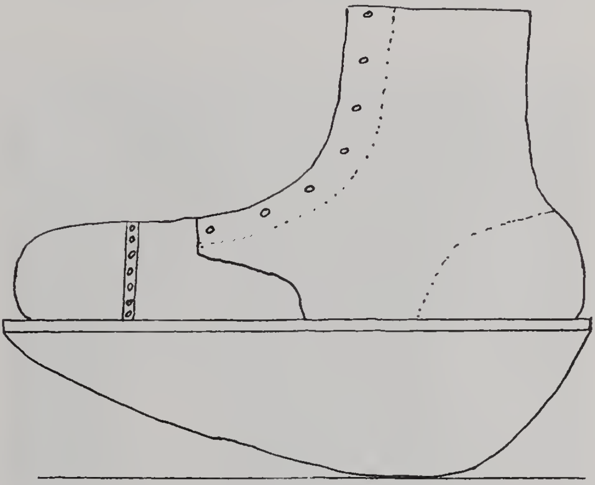
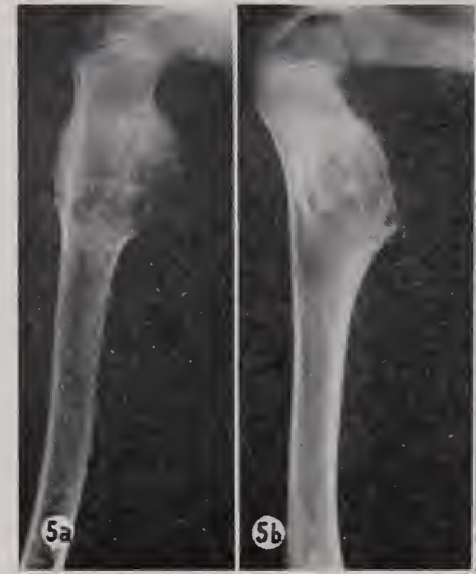


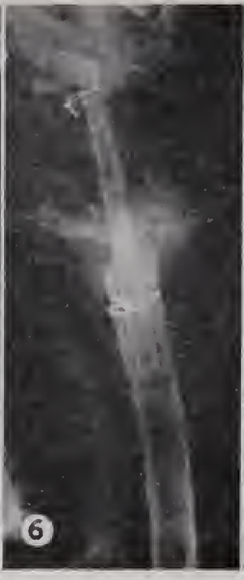
Fig. 3. Shoe with rocker bottom sole.

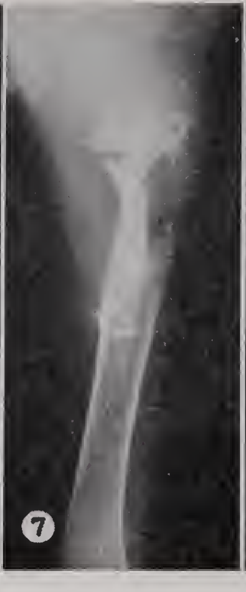
The limb was kept in a long leg cast for three months and following this in a short leg walking cast for an additional three months. By this time the os calcis had grown solidly to the distal surface of the tibia and the foot was stable. On November 8 he was fitted with a short leg brace and shoe with a rocker bottom sole (fig. 3) which had an elevation of two inches. The rocker bottom sole allowed a fairly normal forward progression in spite of a stiff ankle and entirely removed the strain from the anterior and midtarsal joints that is usually present in a foot with an ankylosed ankle.

For the past eight months he has been using only the rocker bottom shoe without the brace. He is on his feet long hours, is very active, runs, plays ball and states that the ankle does not bother him and he is free of pain. Roentgenogram (fig. 4) taken twenty months postoperatively reveals no evidence of recurrence and there is solid union of the tibia to the os calcis.

This boy was presented in person. He walked







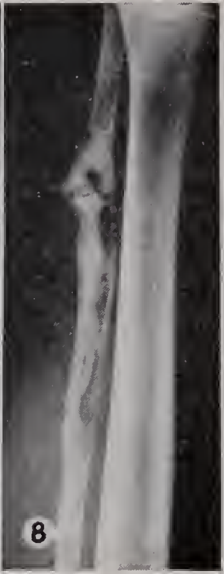
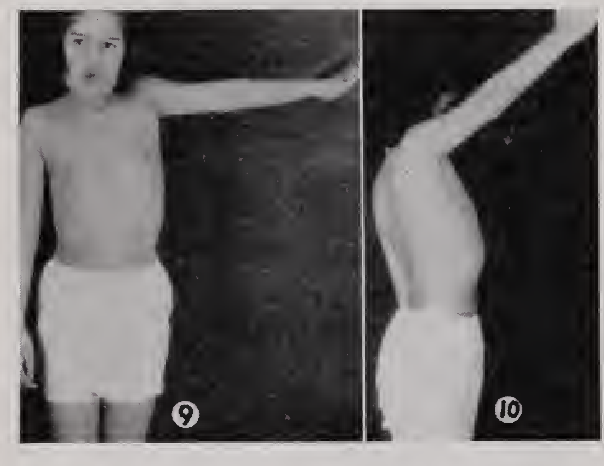


Fig. 5a, 5b. Tumor of proximal end of humerus.
Fig. 6. Fibular graft in humerus.

Fig. 7. Shows enlargement of fistula after removal of graft.
Fig. 8. Shows subpereostal regeneration of fibula.



Figs. 9 and 10. Indicate present active use of arm.

very well and went up and down stairs in a normal manner with a barely perceptible limp.

Case 2. M. H. This child was first seen on February 6, 1940, at 9 years of age. There was a history of a tumor of the right arm near the shoulder, first noticed eight months previously. There was no pain. The tumor grew very rapidly after it was first noticed.

Examination revealed a hard bony tumor at the proximal end of the right humerus that was not tender and moved with the bone. Temperature was normal. Urinalysis was normal. Blood count showed a slight secondary anemia. Sedimentation rate was 58 mg. in one hour. The Mantoux test was normal. Roentgenogram of the arm revealed a bony proliferative tumor (fig. 5) of the proximal end of the humerus involving a large portion of the circumference with areas of rarifaction seen in the cortex. Roentgenogram of chest revealed no evidence of metastasis.

After many consultations the consensus of opinion was that this was probably of low malignancy and amputation would probably give a certain cure. However, it was decided to attempt a complete local resection as a much less mutilating procedure, giving a fair chance of cure. On March 30, through an anterolateral incision, the tumor was resected, including the entire circumference of the humerus without disturbing its covering. The middle third of the right fibula was removed subperiosteally and was implanted in the medullary canal of the humerus and into a drill hole extending into the head of the humerus. A Kirschner wire was placed through the olecranon and the arm placed in an abduction cast with mild traction to the humerus. On June 21 the top portion of the cast was removed and exercises of the arm in abduction were instituted. On November 15 the cast was removed and an abduction brace supplied.

Figure 6 shows the fibular graft in place immediately postoperatively held by two small stainless steel wires. Figure 7 shows the marked thickening and enlargement of the fibula that has recurred due to the stimulus of use. Figure 8 shows the subpereosteal regeneration of the fibula that occurred. Figures 9 and 10 reveal the child at the present time showing the active use of the arm unsupported. She has no disability in the leg at all and walks freely and actively without a limp. She has free and normal use of the fingers and elbow and is able to raise the arm against gravity and considerable resistance. She is encouraged to use the arm actively, but it is being kept in an abduction splint most of the time without being fastened to the splint to protect the new bone from possible injury until complete restoration has occurred. There is no evidence of recurrence up to the present time.

SUMMARY AND CONCLUSIONS

Two surgical problems have been presented in which radical local resection was chosen in preference to amputation and in which good functional results have been obtained. In the first case it is felt that the rocker bottom shoe contributed materially to the success of the procedure. It has been used in a variety of other cases having stiff ankles or painful ankles combined with a short limb, with considerable gratification to the patient.

DIFFUSE TIBIAL SCLEROSIS*

CASE REPORT

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Continuous or intermittent recurrent disability from chronic pyogenic osteomyelitis results from one or more of several possible causes. The case to be briefly reported from the standpoint of one of these causes demonstrates chronic continuous and periodically increased tibial pain and disability in a young, adult man with marked osteopetrosis or sclerosis (scarring) of nearly the whole tibia with a few small, enclosed abscesses and actual diffuse tibial hyperplasia.

The usual causes of disability in chronic osteomyelitis are:

1. Presence of sequestra (dead bone), producing (a) recurrent acute inflammation with drainage, (b) continuous prolonged sinus drainage.

2. Cavitis in the bone with precipitous walls or adjacent to a vascular tissue such as sclerosed bone, tendon or other structures, where poor circulation fails to furnish granulation tissue to obliterate the space faster than inflammatory erosion can take place, resulting in persistently draining sinuses.

3. Deep, closed abscessed bone cavitis (Brodie's type) with intermittent reactivity.

4. Diffuse osteopetrosis or sclerosing osteomyelitis (Garre).

5. Nonunion or pathologic fracture which is uncommon, if immobilization is continued even in pyogenic osteomyelitis.

6. Shortening, deformity and frequently ankylosis or degenerative arthritis in adjacent joints, cellulitis and scars. Degenerative changes may result from mechanically disturbed weight-bearing surfaces plus prolonged strain, or from the disturbed vascularity to articular condyles from old osteomyelitis.

Ankylosis is common in those few joints in which the ligamentous structures attach distal to the epiphyseal line (as in the hip joint) such that an osteomyelitis of the shaft rapidly becomes suppurative arthritis of the joint. In osteomyelitis avoid surgery on the joint side of the epiphyseal line; stay on the shaft side.

There are undoubtedly numerous other occasional causes of disability from chronic osteomyelitis of less importance such as recurrent cellulitis in the soft tissues, following periods of overactivity or decreased resistance on the part of the individual. Also the presence of scars in the soft tissues in the anterior tibial region are occasionally noted and are often improved by subfascial excision and resuture in the stage of quiescence. This paper, however, deals only with one phase of the above mentioned causes for disability.

CASE REPORT

Mr. W. B. was first seen at King County Hospital in the Outpatient Department in April, 1938, with history of recurrent attacks of disability with pain in the right tibia noted. He had a history of having had pyogenic osteomyelitis in childhood, which had been operated upon when he was fourteen years of age.

On first examination, briefly, this man had a long scar over the anterior aspect of the right tibia with apparent enlargement of the tibia itself. He had at various times periods of increased heat and occasionally redness over the upper aspect of the tibia and also some mild bone tenderness in this region at times. However, motion of knee joint and ankle joint was complete, and there were no open or draining sinuses over the tibia.

He was given conservative treatment over a long period of time and was seen on numerous occasions at the Outpatient Department. Roentgen therapy was given over the tibia in small doses; the operator does not know the technic, and this at times appeared to relieve the pain moderately and for a short period. However, this did not appear to bring about cure nor lasting relief.

It was also stated by some roentgenologist that there was danger of producing scarcoma of the tibia by radiating chronically infected body structures. If radiation produces sclerosis, it may accentuate the bone sclerosis. Roentgen findings in several instances showed an increase in size of right tibia with marked increase in bone density, there being no normal bone texture present because of diffuse osteopetrosis, or so-called marble-bone formation. However, at the upper end of the tibia there were a few areas of circular decreased density suggesting the presence of abscesses.

Diagnosis of sclerosing osteomyelitis, diffuse, with probable local bone abscesses was made. In April, 1938, operation was performed on this right tibia. A long, vertical incision was made, excising the scar over the tibia, the incision being about 9 or 10 inches in length, by estimation. Periosteum over the anterior surface of the tibia was stripped to each side with periosteal elevator, and with a curved osteotome approximately the anterior half of the tibia was saucerized, the pieces of brittle bone breaking off and flying about more like soft rock than human bone.

Small bone abscesses with purulent content were encountered in one or two areas in the upper end of the tibia. When about one-half or less of the bone remained, numerous drill holes were placed through the bone, penetrating the cortex on the deep aspect in three or more rows up and down the length of the sclerosed area of the tibia to allow granulations to penetrate the remainder of the bone. The wound was packed with vaseline gauze, no sutures were taken, and a plaster cast was not applied because of the inherent strength of the tibia.

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*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

There was considerable postoperative pain for about one week. About ten days or two weeks after the operation, at the lower end of the leg an abscess pointed posteriorly, no doubt an area where the drill had penetrated the posterior periosteum too deeply and had carried some infection to the deep structures in the posterior portion of the leg. After the early stage of packing with vaseline gauze when bleeding had stopped, the so-called Stewart treatment, or artificial maggot therapy, was carried out. This treatment consisted in spraying the wound with solution No. 1, .2 per cent picric acid in 8 per cent glycerine in distilled water. This was then followed by spraying the wound with a suspension solution No. 2, calcium-carbonate, 8 per cent, made by autoclaving the calcium-carbonate and mixing with sterile distilled water.

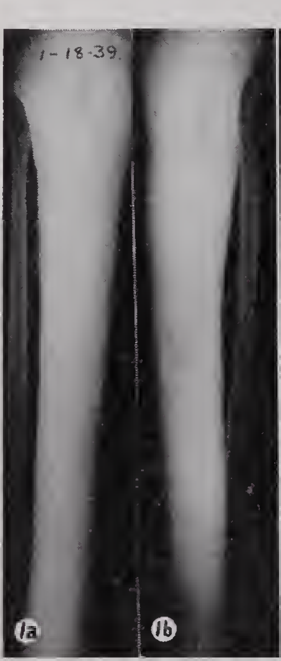
At one stage in the course of this treatment a visiting physician saw the wound after it had been sprayed with calcium-carbonate mixture, not knowing what procedure was being carried out nor the roentgen appearance of the tibia, he felt amputation of the leg would be advisable.

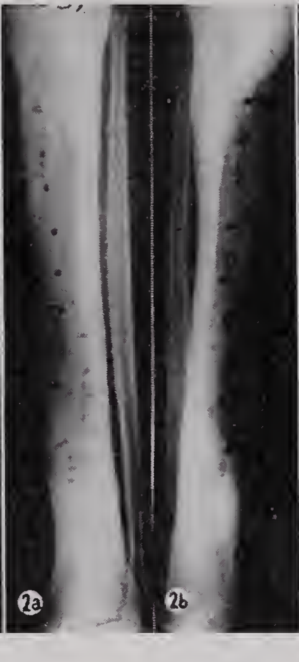
The wound gradually healed with the exception of a small area in the lower portion. About twelve months after the original operation a secondary operation was performed in an endeavor to remove sequestra or stop drainage which persisted here only. A small amount of drainage continued until December, 1940, at which time roentgenogram showed a ring of sequestrum in lower end of the tibia, no doubt representing a sequestrum formed about the drill hole. This eventually presented itself beneath the skin and was plucked out with a forceps. We anticipate that this wound will heal practically immediately.

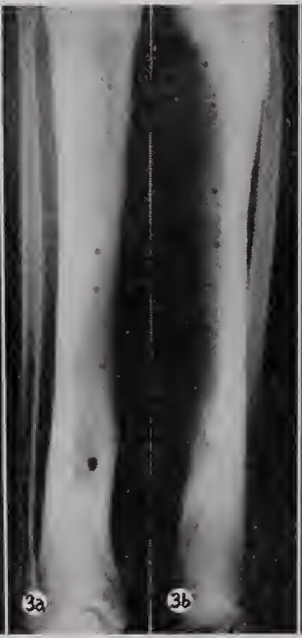
The first roentgenograms demonstrate the state of the tibia before operation (fig. 1a, 1b). The second show the early postoperative condition of the tibia with numerous drill holes (fig. 2a, 2b) which have assisted in revascularization of the tibia itself. Figure 3a, 3b shows the radiographic appearance Dec. 16, 1940. Figure 4a, 4b show condition about two years later.

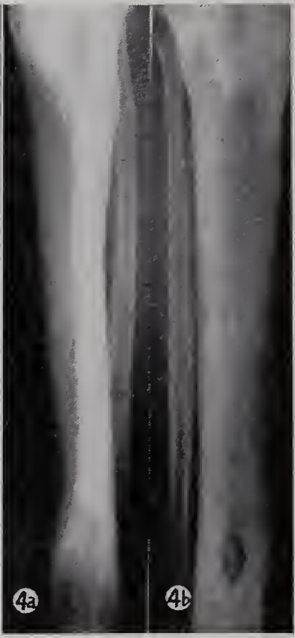
Since the man was discharged from the hospital following his last surgery he has appeared periodically for dressings to the right tibia. These have been very small and represent dressings to a small sinus in the lower end in the last several months.

From a man who was totally dependent on charity and unable to work because of pain and aching in the leg with chronic disability, he now walks without a limp, has practically no pain in the leg and is carrying on a profitable business which requires considerable walking on pavements. Although the investment in hospital time and in surgical effort was great, nevertheless the result has warranted this extensive procedure.









Figs. 1a, 1b. Diffuse tibial sclerosis with probable hyperplasia of the tibia and bone abscess in the superior end, preoperative.

Figs. 2a, 2b. Early postoperative radiograph showing long area of saucerized tibia perforated by multiple drill holes.

Figs. 3a, 3b. Radiograph about ten months postoperatively. The position of the abscess in the lower leg can be seen by the large size of the opening around a drill hole.

Figs. 4a, 4b. About two years postoperatively. A ring sequestrum can be seen in the lower tibia. This was removed after this radiograph was made as it presented in the wound. Apparent revascularization of the tibia has taken place.

FOOTBALL INJURIES TO THE KNEE JOINT*

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Injuries to the knee joint of football players are the cause of great worry and anxiety to every football coach. It is true these injuries may prove slight, but all too frequently it means the loss of a man for the season.

Let us review a few physiologic and anatomic facts regarding the knee: (1) In addition to the hinge action of the knee, there are thirty-six degrees of rotation possible between complete extension which is accompanied by outward rotation and complete flexion which is associated with internal rotation, or 36° of rotation according to Morris. (2) There are thirteen bursae distributed about the knee, three of which may be variable, any one of which may produce trouble. (3) The semilunar cartilages which, when sufficiently injured, produces the so-called "trick" or football knee.

Reviewing the bursae in the order of their frequency of injury, I will begin with, first, the anterior bursae of the knee joint: (1) subcutaneous prepatellar bursa, (2) subfascial prepatellar bursa, (3) infrapatellar bursa, (4) variable bursae, such as the one under the quadriceps femoris muscles, present as a distinct bursa in one out of nine cases and does not communicate with the knee joint, (5) the bursa over tuberosity of the tibia and its pathology must be differentiated from Osgood-Slaughter's disease.

Second, the four bursae in the external hamstring area: (1) the bursa between popliteal tendon and external lateral ligament, (2) the bursa between popliteal tendon and external head of the gastrocnemius muscle, (3) the bursa under the popliteus muscle, (4) the one between the biceps femoris tendon and external head of the gastrocnemius. This is the most important one and is a frequent site of traumatic bursitis.

Third, the four bursae in the internal hamstring area: (1) between the internal head of the gastrocnemius and the internal tuberosity of the tibia, (2) between the internal head of the gastrocnemius tendon and the semimenbranosus tendon; these two often communicate with each other and in 17 per cent of cases also communicate directly with the joint (McAllister) and it is this bursa which gives rise to the so-called Baker's cyst, (3) between the internal lateral ligament and tendons of the semitendinosis and gracilis, (4) variable bursae between the internal condyle and sartorius tendon.

All these bursae may be subject to acute or chronic inflammation either singly or in groups. The more common ones are on the front of the knee and the one under the biceps tendon on the outer side of the knee, caused either by trauma or infection from furunculosis or impetigo types of infection.

Other common points of injury are the following: (1) trauma directly over internal condyle of the femur producing an acute synovitis within the joint, associated with localized pain and considerable swelling, even to the extent of floating the patella; this condition may or may not be associated also with hemorrhage into the joint, (2) tearing of the capsular membrane, with or without tearing the internal lateral ligament, (3) injury to internal semilunar cartilage.

ETIOLOGY

Injuries to the bursae are usually caused by direct trauma or a penetrating infection. Injuries to the capsular and internal lateral ligament and internal semilunar cartilage are due to a driving force, as from tackling or blocking directly against the outer surface of the knee with the foot fixed firmly against the turf or in the firm grasp of an opponent, thus producing greatly increased stress on the inside of the knee joint.

A similar stress may result in the pile-up where the foot and thigh are above ground and a pile-up comes over the unsupported knee.

SYMPTOMS OF INJURY TO INTERNAL SEMILUNAR CARTILAGE

Immediate: (1) There is severe pain and tenderness definitely located on the inner side of the knee at the joint level. (2) There is weakness and loss of function. (3) Patient may have heard or felt a distinct snap. (4) There is marked increase in lateral motion in the joint and severe pain on attempting complete flexion.

Later: (1) There is swelling in and above the joint with a floating patella. (2) One may feel the broken cartilage. (3) If the capsule is considerably torn there is more swelling outside the joint and less pain in the knee. (4) Locking of the joint; may be immediate but more often comes on later.

Subsequent history of the broken cartilage which gives rise to the term "trick knee": (1) The knee will "go out" unexpectedly from walking over irregular ground or pivoting inward with the foot

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*Read before the Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 31-Feb. 1, 1941.

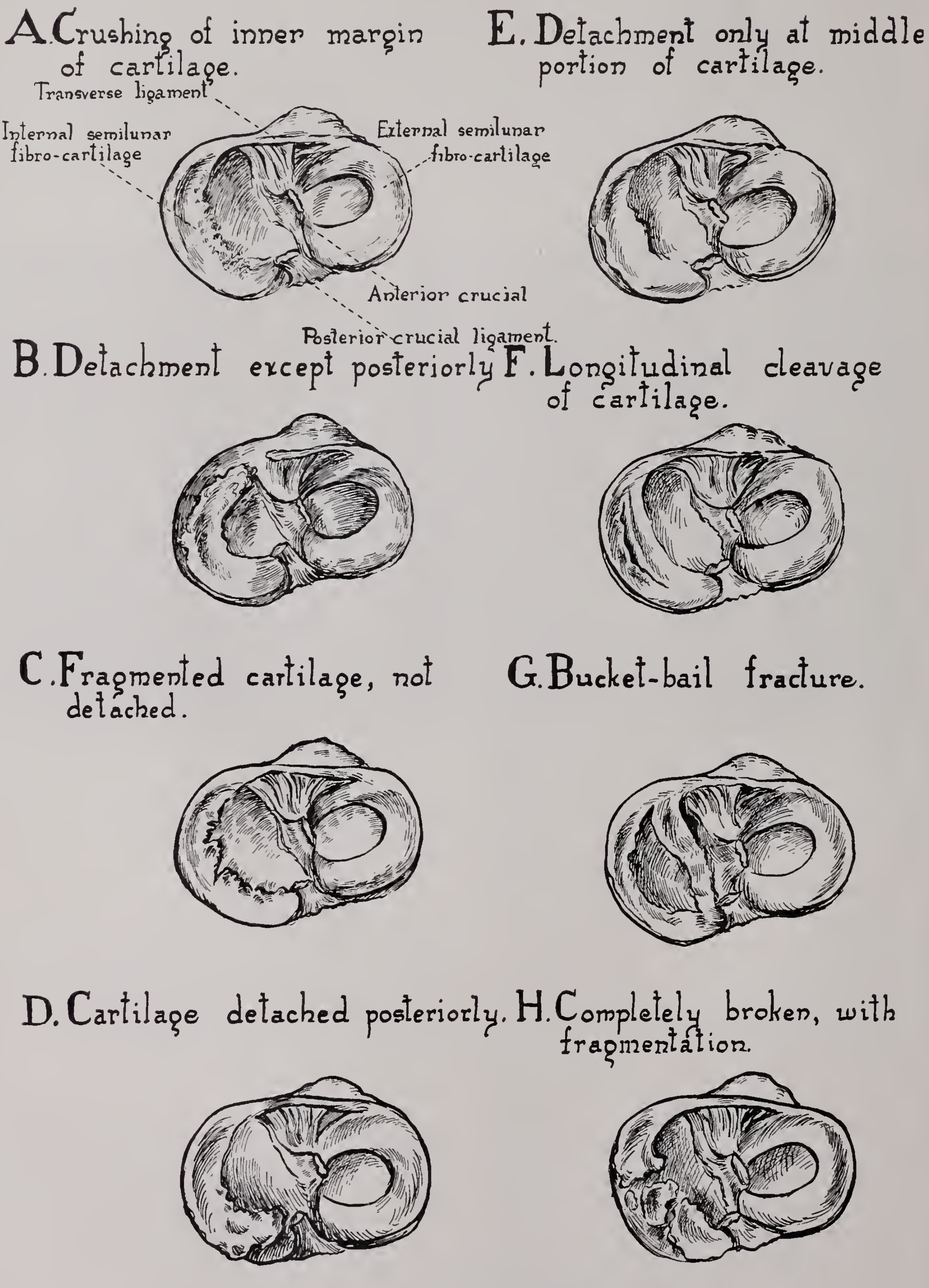
A. Crushing of inner margin of cartilage.
Transverse ligament
Internal semilunar fibro-cartilage
External semilunar fibro-cartilage
Anterior crucial
Posterior crucial ligament.
E. Detachment only at middle portion of cartilage.
B. Detachment except posteriorly
F. Longitudinal cleavage of cartilage.
C. Fragmented cartilage, not detached.
G. Bucket-bail fracture.
D. Cartilage detached posteriorly.
H. Completely broken, with fragmentation.

Fig. 1. Illustrates various injuries to cartilages of knee joint.

fixed. This experience may even occur during sleep. (2) Bumping sensation on certain flexing motions of the knee. (3) Locking temporarily until the patient goes through certain manipulations or it may be irreducable. (4) Inability to squat on his heels. (5) An internal creaking much like that of a new saddle.

TREATMENT

When the cartilage is only loose in the central portion (fig. 1. A and E), injection of from 2 to 5 drops of tr. iodine will often produce enough adhesions to fix the cartilage firmly to the capsule.

When the cartilage is broken in any one of the several types, the only satisfactory method of procedure is complete removal of the cartilage. I very much prefer to do this through a small opening and use the knee at the earliest possible date. I have the patient out of bed on the third day, walking the fourth day and home from the hospital on the seventh day and ready for full duty in six weeks.

Baker Cysts. This term to many may sound like something new. It is a synovial cyst in the popliteal space, communicating with the knee joint and made up of the semimembranosus bursa which may by extension pass down the leg under the gastrocnemius and soleus muscles.

It was originally described by Sir Morrant Baker in the 13th volume of St. Bartholomew's Hospital reports in 1877 and has been buried in the family archives until a few years ago. His case was probably a tabetic arthropathy primarily with extension of swelling to the semimembranosus bursa with subsequent rupture of the bursa and the fluid extending into a large pocket under the calf muscles. It is an interesting story but Charcot and Allbutt's previous writing were not as commonly known then as at the present time.

Treatment consists of complete removal of the cyst and closure of the opening in the capsular membrane, where it spans across from the internal condyle of the tibia to the postcrucial ligament. This can be done by retracting the popliteal vessels outward and placing two mattress chromic stitches through the capsule.

Five postoperative cases are shown illustrating five different types of injury:

Case 1. Illustrates a case in which the internal semilunar cartilage had been extensively fragmented, seven pieces having been removed resulting in complete cure (fig. 1, H).

Case 2. Record case for speed of recovery. Patient walked on the third day at the bedside. On the fourth day he walked down the hall, on the fifth went home from the hospital, on the sixth he worked at his bench as machinist and on the seventh day drove a midget auto in the races at Vancouver and won three races (fig. 1, D).

Case 3. Combination of fractured internal semilunar cartilage and a Baker's cyst which were operated on at the same time. He left the hospital on the tenth day. Complete recovery (fig. 1, B).

Case 4. A University of Washington fullback who was oprated on six weeks ago and is now playing handball and anxious for spring practice to begin (fig. 1, C and E).

Case 5. A halfback operated on four weeks ago, now completely recovered (fig. 1, F and G).

All of these men ran up and down the steps to the stage and demonstrated the full flexion and extension of their injured legs and could squat down and sit on their heels, which is a most difficult task for a boy with a trick knee.

A new type of knee brace was demonstrated, weighing only 18 ounces, made of plastic and steel. It is an entire innovation in its principle of supporting a knee with increased lateral motion. The brace has a hinge and swivel joint, is adjustable for leg lengths, being worn on the outside of the leg. The same brace may be used equally well on either leg.

YOUTH RUPTURES SPLEEN PLAYING FOOTBALL

An instance of a ruptured spleen incurred while playing football is reported in *The Journal of the American Medical Association* for March 15 by L. Wallace Frank, M.D., Louisville, Ky., who says that so far as he has been able to ascertain only one other case of such a football injury has been reported in medical literature.

The rupture occurred when the patient, a youth aged 17, was struck in the upper left portion of the abdomen while playing football. "He was completely knocked out," Dr. Frank reports, "his color was pale and his pulse was thready; he was carried from the field. On the following day he made the trip home with the team, a distance of 250 miles. He had no complaints but lacked his usual energy. During the next day, Sunday, he remained quietly at home, and the family noticed that he had lost his appetite. On Monday he returned to school as usual and that afternoon reported for football practice. He went through the routine signal drill, being apparently perfectly well. The following afternoon while in scrimmage he was again struck in the abdomen and suffered agonizing pain on the left side and pain in the left shoulder."

At this time, four days after the original injury, he was sent to the hospital. Definite signs of internal hemorrhage appeared and the following day he was operated on and his spleen removed. He made an uneventful recovery and left the hospital on the fourteenth day after the operation.

Examination of the spleen revealed that it had been torn completely through. Discussing the length of time between the original injury and the signs of hemorrhage Dr. Frank says: "At the time he was first hurt the spleen was torn, but the blood coagulated and sealed off the bleeding surfaces. (Examination of the removed spleen showed an old organized blood clot covering the splenic pulp.) . . . Following his second traumatism (injury) I think that the tear in the spleen was reopened and at this time the pedicle (stem of the spleen) was torn."

TREATMENT OF UNREDUCED COLLES FRACTURE*

EDWARD LECOCQ, M.D.
SEATTLE, WASH.

Unreduced, malunited Colles fractures are not seen as frequently today as in former years. We do see them on occasion, however, and find that the condition, most distressing to the patient, requires correction.

The deformity of the wrist has three elements: first, dorsal angulation of the distal fragments, with fixed dinner-fork deformity; second, shortening of the radius with resulting radial deviation of the hand; and, third, broadening of the wrist.

In addition to the deformity there is usually pain. This is most commonly located over the region of the ulnar styloid. Roentgenograms will often reveal an ununited fracture at this point. Usually arthritic changes will be noted.

Malunited Colles fracture lends itself rather well to operative correction, using the method of Campbell. After the usual preparation and application of a tourniquet, an incision is made over the radius, passing longitudinally through the anatomic snuff box. Tendons are retracted and then the radius is exposed subperiosteally. At site of the old fracture an osteotomy is performed. The distal fragment is wedged downward, forming a V-shaped osteotomy with base dorsal. Incision is then made over the lower ulna, which is explored subperiosteally. With a chisel the ulna is split upward for about one and a half inches, removing the styloid process and about half the shaft of the ulna. The point of this graft is trimmed off and it is fitted into the radial osteotomy. It may be fixed there with chromic suture passed through drill holes. This gives excellent stability.

The wounds are closed and the arm is encased in plaster, extending from the base of the fingers to the axilla, with the elbow at a right angle and the hand in mild volar flexion and ulnar deviation. The plaster should be split from fingers to the elbow. The forearm is kept in elevated position for three days, then the patient becomes ambulatory. The plaster is changed in four weeks and a short arm plaster applied. Check roentgenograms should be made at first weekly, then every other week. Immobilization is continued for a total of six or seven weeks.

Illustrations are presented of a case of malunited Colles fracture. The first roentgenograms show severe deformity, the second show the arm in plaster after operation, and the third present final result.

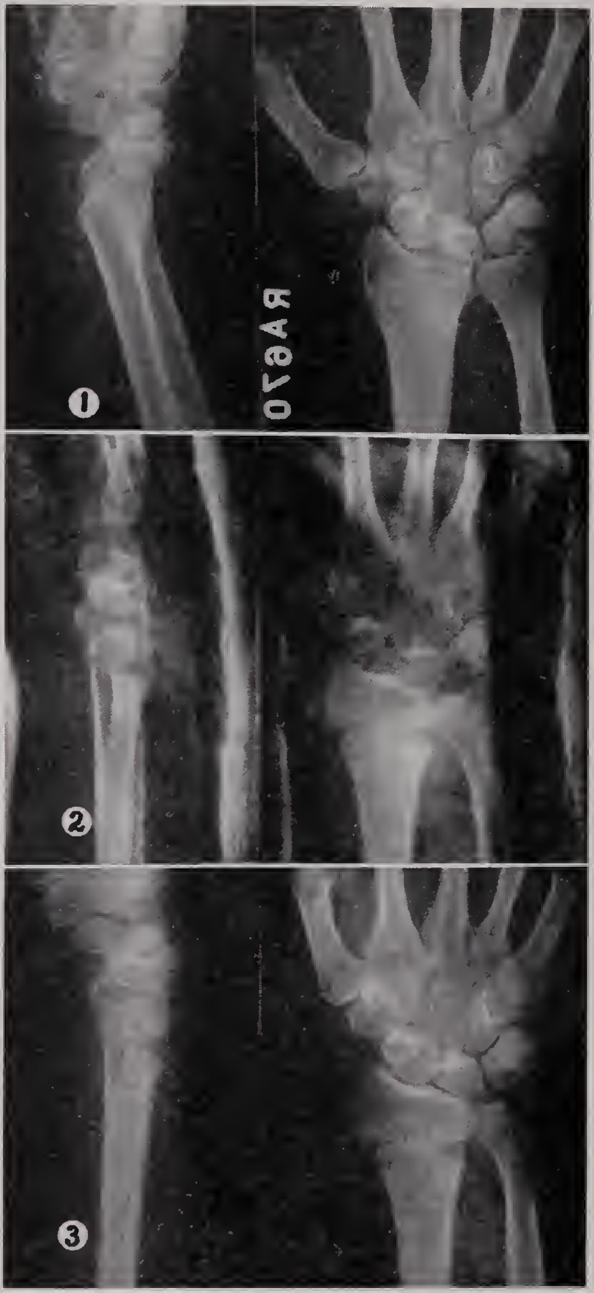

Fig. 1. Malunited Colles fracture, showing deformity.
Fig. 2. Arm in cast after operation on deformity.
Fig. 3. Shows final result.

The operation produces a wrist that has lost all elements of the original deformity as well as the pain. The functional result is excellent and the operation is in every way extremely gratifying to the patient as well as the surgeon.

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*Read before the Annual Meeting of Washington State Medical Association, Seattle, Wash., Jan. 31-Feb. 1, 1941.

POSTGRADUATE LECTURES

During the year postgraduate courses of lectures are scheduled for the profession in our three states. In order that these courses may become well known, and be presented to the readers of this journal from month to month, they will be hereafter listed under the above heading with certain details pertaining to each as they may be received for publication. In this issue appear data which have been received descriptive of each course of the lectures. In the future issues it is expected that these will be supplemented as more information is received concerning each of them.

OREGON

NOBLE WILEY JONES LECTURESHIP

Portland, April 3-4

Auditorium, University of Oregon Medical School, April 3-4.

Speaker will be Bradley Patten, Professor and Director of Anatomy, University of Michigan Medical School.

OREGON ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

Portland, March 31-April 5

University of Oregon Medical School and Oregon Academy of Opththalmology and Otolaryngology will hold its postgraduate course of lectures March 31-April 5.

Guest speakers will be Frank E. Burch, Professor of Ophthalmology, University of Minnesota Medical School and Harold I. Lillie, Head of Section of Otolaryngology and Rhinology, Mayo Foundation.

PORTLAND ACADEMY OF MEDICINE

MAY 12 - 14

Portland Academy of Medicine will hold a meeting in University of Oregon Medical School Auditorium May 12-14. Guest speaker will be Virgil H. Moon, Professor of Pathology, Jefferson Medical College, Philadelphia.

SUBJECTS

May 12, Circulatory Failure of Capillary Origin.

May 13, Shock: Conditions of Occurrence and Sequelae.

May 14, Shock: Prevention, Early Recognition and Treatment.

COURSES FOR WHICH INFORMATION WILL BE PUBLISHED LATER

May 19-21—University of Oregon Medical School Postgraduate Session in Medicine (Gastroenterology).

Sept. 2-3 — Portland Academy of Medicine.

Sept. 3-6 — Oregon State Medical Society Postgraduate Session.

WASHINGTON

PACIFIC NORTHWEST MEDICAL ASSOCIATION

Spokane, June 25-28.

This postgraduate course consists of lectures on bronchoscopy, pathology, neurology, internal medicine, surgery, physiology, endocrinology, roentgenology and obstetrics. Names of lecturers and other details of this meeting are listed on page 11.

SPOKANE SURGICAL CLUB

April 19

Spokane Surgical Club will hold its annual meeting April 19, featuring clinics and lectures.

Guest speaker will be Alfred Blalock, for several years Associate Professor of Surgery at Vanderbilt University School of Medicine. He has recently been appointed Professor of Surgery at Johns Hopkins University School of Medicine, effective July 1 of this year. He was a Johns Hopkins Medical School graduate in the class of 1922.

TACOMA SURGICAL CLUB

May 3

Tacoma Surgical Club will hold its annual meeting with lectures and clinics in Tacoma May 3.

Guest speaker will be Harry E. Mock, Associate Professor of Surgery, Northwestern University Medical School, Chicago.

UNIVERSITY OF WASHINGTON ANNUAL GRADUATE MEDICAL COURSE

Seattle, July 14-18.

Guggenheim Hall, University of Washington, July 14-18. Lecturers for this course will be as follows:

Maurice G. Pincoffs, University of Maryland. Subject: Medicine.

Max Thorek, American Hospital of Chicago. Subject: Surgery.

John Saunders, University of California. Subject: Surgical Anatomy.

Howard C. Naffziger, University of California. Subject: Neurosurgery.

IDAHO

STATE MEDICAL ASSOCIATION ANNUAL LECTURES

Sun Valley, June 18-21.

The annual meeting of the State Medical Association provides a postgraduate course of lectures. The program for the Sun Valley meeting in June will present speakers from Stanford University School of Medicine, who will be as follows: William Dock, pathologist; Dàvid Rytand, internist; Nelson Howard, surgeon; Carleton Mathewson. surgeon; Morris R. Tainter, pharmacologist.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-SEVENTH ANNUAL MEETING, PORTLAND, SEPT. 3-6.

ESTABLISHED POLICIES OF OREGON STATE MEDICAL SOCIETY

Prepayment plans of medical care are endorsed with certain definite limitations. Medical care for certain groups can be approved if this care is provided by physician owned and controlled service bureaus. All physicians practicing ethical medicine must be eligible to perform service under any plan of group medical care. Hospital service plans offering hospitalization only can be approved, if profits are not derived from physician's services.

Voluntary indemnity insurance can be approved, if operated by a true insurance company whose medical function is limited to reimbursing the insured. Other special plans for providing medical care should first be approved by the Council of Oregon State Medical Society. Opportunity for the agency operating such plans to practice medicine without a license must not exist or be inherent in the plan.

The physician must be responsible solely to his patient at all times. An organization or corporation must not make a profit from the physician's services.

Oregon State Medical Society has no fee schedule.

TENTATIVE PLANS FOR ANNUAL MEETING

The Program Committee of Oregon State Medical Society has started planning for the Annual Session in Portland next September and is making a radical departure from the customary type of program. There will be no papers given by members of the Society. To take the place of these, there will be: (1) morning clinics in five hospitals; (2) panel discussions in the afternoons arranged so that it will be possible to hear five different discussions during the session; (3) registration will be necessary for attendance at the clinics and panel discussions. Guest speakers will lecture as usual and one evening will be a joint meeting with the Portland Academy of Medicine.

ORGANIZATION ACTIVITIES

The Council of the Oregon State Medical Society met in Portland, March 1, 1941. A major portion of the time was devoted to consideration of the bills with medical implications before the legislature. A full discussion of the medical bills will be presented in this column next month.

Approval was granted to the Mast Hospital Association of Myrtle Point, making three approved organizations in this district. This action was possible because of the absence of economic competition and the services of all physicians would be available to any one contract.

The Committee on Exhibits for the annual session was instructed to follow the customary procedure of admiting all technical exhibitors, whose products are acceptable to the American Medical Association.

Other matters were discussed from the standpoint of progress and have not been developed sufficiently to allow a final report at this time.

UNIVERSITY OF OREGON MEDICAL SCHOOL

It has been decided to drop the Postgraduate Session in Gastroenterology for the current year, due to the fact that the Medical School calendar is already somewhat overloaded. (This course was originally scheduled for May 19-21, 1941; but in accord with the foregoing decision, it will be deleted from this year's sessions).

ANNUAL NOBLE WILEY JONES LECTURESHIP

Bradley Patten, Professor and Director of the Department of Anatomy at the University of Michigan Medical School gave the fourteenth annual N. W. Jones Lectureship at University of Oregon Medical School on April 3-4. The lectureship was conducted under the supervision of the faculty committee comprised of Laurence Selling (chairman) and T. Homer Coffen. During the past ten years, the following speakers have been brought to the campus through this lectureship:

1931, E. T. Bell, Professor of Pathology, University of Minnesota.

1932, Walter B. Cannon, Professor of Physiology, Harvard University Medical School.

1933, George H. Whipple, Professor of Pathology, University of Rochester.

1934, John Fulton, Sterling Professor of Physiology, Yale University.

1935, Wilder Penfield, Professor of Neurology and Neuropsychiatry, McGill University; and Director of the Montana Neurological Institute.

1938, Spring, Eugene M. Landis, Assistant Professor of Medicine, University of Pennsylvania.

1938, Fall, Arno B. Luckhardt, Professor of Physiology, University of Chicago.

1940, Herbert M. Evans, Professor of Anatomy and Morris Herztein, Professor of Biology, University of California.

ASSIGNED TO EXTENDED ACTIVE DUTY UNDER NATIONAL DEFENSE

The following members of the staff of University of Oregon Medical School have been assigned to extended active duty for one year, under the national defense program:

George H. Henton, Clinical Fellow in Opthalmology, to Moffatt Field, Calif.

T. Glenn Ten Eyck, Clinical Fellow in Otolaryngology, to Ft. Lewis, Wash.

E. Murray Burns, Clinical Associate in Medicine, to Ft. Lewis, Wash.

Gordon K. Smith, Clinical Instructor in Pathology, to Ft. Lewis, Wash.

Glen Koonce, Resident in Dental Medicine, to Ft. Stevens, Ore.

Wilbur Bolton, Clinical Instructor in Otolaryngology, to Barnes Hospital, Wash.

Warren E. Nielsen, Clinical Fellow in Urology.

H. Cline Fixott, Jr. Assistant Clinical Instructor in Dental Medicine, to Camp Murray, Wash.

Charles Littlehales, Clinical Instructor in Medicine, to Ft. Ord, Calif.

Henry L. Krafft, Professor of Military Science and Tactics, to Presidio of Monterey, Calif.

Margaret Demke, R.N., Admitting Nurse, to Ft. Lewis, Wash.

Ralph Hayes, Chief X-ray technician, to McChord Field, Wash.

Jessie Paddock, R.N., Special Duty Nurse, to Ft. Lewis, Wash.

(Plus eleven general duty nurses from Multnomah Hospital unit).

46th General Hospital Unit

The 46th General Hospital Unit of the University of Oregon Medical School is conducting a training program of personnel being assembled for assignment to this unit, under the direction of Col. J. Guy Strohm.

Commencement

Graduation exercises for medical students of the 1941 class will be held in the auditorium of the Medical School on the evening of June 6th. Faculty committees are in charge of the exercises.

OREGON STATE BOARD OF HEALTH

Staff Cooperates With State College

The State Board of Health cooperated this year with the School of Home Economics at Oregon State College at their annual Home Interests Conference in February, assisting in arranging and presenting the program on the day devoted to Nutrition. Dr. Erickson, Director of the Division of Maternal and Child Health, gave a case presentation on "Dietary Deficiencies;" Mrs. Wells with Mrs. Williams of the College staff used living models to present the "Indices of Good Nutrition;" and Miss Mealey and Mrs. Wells participated in a panel discussion on "Coordinating Nutrition Work in Oregon."

Mobile Laboratory Leaves for Field

The plague control mobile laboratory left on its annual survey on March 3. Mr. Gatlin R. Brandon and Mr. Harry Nytinger, who are in charge of rodent control work, will make a particular study of the areas in which there are national defense projects.

Board Presented at New York Meeting

Miss Lucille Perozzi, Director of the Division of Public Health Nursing, represented the Oregon State Board of Health at the meeting held in New York City the latter part of January. She also attended a meeting of the committee on the controller guide for public health nursing, which is operated by the National Organization of Public Health Nurses. Miss Perozzi is chairman of a committee to work out plans for a unit of study in oral health conditions and diseases.

Audiometer Tests Given Children

Warren H. Gardner, Consultant in Hearing and Vision, has given phonograph audiometer tests (first screen) to 11,997 pupils; retests (second screen) to 1,794 pupils and pure tone audiometer tests to 609 pupils. A total of 187 parents have been interviewed by both Dr. Gardner and the local health nurses. The county health officers made 314 inspections of ears, nose and throat cases selected from the three tests for further observation. This work has been done in four counties—Baker, Clackamas, Lane and Clatsop.

Sanitarians Employed

Mr. W. J. Cloyes, Sanitarian of Klamath County, has been transferred to the Lane County Health Department. Mr. W. B. Davis was employed to replace Mr. Cloyes at Klamath. Marion County has employed an additional sanitarian, Mr. F. R. Coleman, and Umatilla County has employed Mr. C. W. Daley. The county health officers of Clatsop and Josephine counties have also requested the approval of revised budgets which will permit the employment of sanitarians at an early date.

WOMAN'S AUXILIARY

Portland, Ore., March 20, 1941.

On March 24, the Woman's Auxiliary to Multnomah County Medical Society (at Portland) held its regular monthly meeting in the auditorium of the Medical Dental Building. The address for the day was given by Mr. W. Jay Smith, president, Oregon Wild Life Federation. He showed a moving picture entitled "The Polluted Willamette," an educational film pertinent to clean-up of the river. It was felt important that doctors' wives have this information at a time when the matter is being so widely discussed.

Sixteen members of the board met March 10 for luncheon and the regular monthly meeting at Good Samaritan Hospital. This followed the class in first aid, a branch of the Red Cross, in which forty of the members of the Auxiliary have enrolled. The lectures are to be held weekly from ten to twelve a.m., for ten weeks, after which an advanced lecture course may be had. The advanced course will be of particular interest to those having had previous nurse's training.

On February 24, fifty-six members and guests met to hear Dr. Edward Hume of the National Christian Mission speak on "Religion and Health." Tea was served afterwards from a table decorated with crystal and spring blossoms.

Auxiliary members this year have pledged themselves to take a more active interest in the Junior Medical Auxiliary (wives of medical students and interns) by having at least one other member present at each meeting to aid the Auxiliary's committee member having charge of this project.

Members of the Student Loan Committee are now actively soliciting clothing from the doctors through their wives for deserving medical students.

Mrs. R. Lindsay McArthur,
Chairman, Press and Publicity.

MEDICAL NOTES

New Hospital Unit. Announcement has been made that the new east-side unit of St. Vincent's Hospital, Portland will be open in May and will be known as Providence Hospital. The hospital will be devoted to medical and pediatric cases.

R. E. Kleinsorge of Silverton has been appointed member of the State Board of Higher Education succeeding F. E. Callister of Albany.

Thomas D. Robertson of Portland has been appointed to the State Board of Health to fill the vacancy left by the death of Roy A. Payne.

Blair Holcomb of Portland has been appointed to the Oregon State Nutrition Committee for Defense.

Louis P. Gambee of Portland has been appointed to the State Public Welfare Commission to fill the vacancy created by the resignation of Robert A. Benson.

Charles T. Sweeney of Medford, former president of Oregon State Medical Society and of Pacific Northwest Medical Society, was honored by a resolution of the Jackson County Medical Society upon the occurrence of his fiftieth anniversary of graduation from the Medical School and entrance into private practice.

North Idaho District Society held a meeting at Lewiston March 19, with sixteen present, preceded by dinner. Harold Carnahan of Spokane read a paper on "Management of Some Minor Problems of Childhood."

SOCIETY MEETINGS

MULTNOMAH COUNTY MEDICAL SOCIETY

The first meeting of the month was held March 5 in conjunction with Portland Academy of Medicine, at the Auditorium of the University of Oregon Medical School. Under the auspices of the Academy, Dr. Henrick Dam, Associate Professor, Biochemical Institute, University of Copenhagen, Denmark, presented a lecture entitled, "A Survey of the Present State of Knowledge on Vitamin K."

The second regular meeting of the month was omitted, due to the fact that the Sommer Memorial Lectures were held March 18 and 19. Donald Guthrie, Head of the Guthrie Clinic in Sayre, Pennsylvania; and William S. Middleton, Professor of Medicine of the University of Wisconsin, School of Medicine, were the guest speakers.

A special meeting of the Society was held March 29. Kendall Emerson, Managing Director of the National Tuberculosis Association, spoke on "The Chemotherapeutic Approach to Tuberculosis."

MARION-POLK MEDICAL SOCIETY

At a meeting in Salem of the Marion-Polk Medical Society March 11, H. L. Blosser of Portland, member of the State Industrial Accident Commission, gave a talk on "Problems of Industrial Medicine with reference to the workman, employer, medical profession and insurance carrier.

WASHINGTON COUNTY MEDICAL SOCIETY

With the granting of a Charter by the State Medical Society, final details in the organization of Washington County Medical Society with twelve charter members has been completed. A. O. Pitman is president. Dr. Waltz is vice-president, and Dr. Kabeiseman is secretary-treasurer. The Medical Society will exercise group control over medical economics in the county and concurrently members of the Society are now eligible for membership in the Washington County Division of the Multnomah Medical Service Bureau.

MEDICAL ACTIVITIES IN FRANCE ARE UNDERGOING GREAT CHANGES

"Medical life in France is undergoing great changes," the regular Paris correspondent of *The Journal of the American Medical Association* reports in the March 22 issue in a communication dated August 24, the first received from him since the German occupation last June. "The unforeseen and rapid occupation of the capital by the army of invasion threw not only the hospital and health services but also academic life and scientific output into confusion. Many periodicals have discontinued publication. Others had to reduce the number of their pages by half. Beginning with the first of the year, articles signed by Jews may not be published. The cutting off of communication between free and occupied France has practically made two countries of France.

"The number of physicians in the capital has fallen tremendously. Of the six thousand five hundred physicians in Paris and the department of the Seine, only two thousand remained after the mobilization at the end of April. This number was further reduced to four hundred and fifty by June 14, the day the Nazis entered Paris. While large numbers of the population fled, the reduction was not so great as to make the greatly reduced body of physicians sufficient for the needs of the people. Whole areas of the city could show neither medical practitioner, midwife nor druggist. Sanitary offices had likewise ceased. The faculty of medicine, the laboratories and the libraries were almost abandoned. Public health was seriously menaced. Thanks to the courageous initiative of voluntary health committees, such as that of Paris and its environments, no epidemics occurred. The Academy of Medicine, which had planned a refuge in advance, remained at its post, though in greatly reduced number and with curtailment of its activities. However, its meetings were regularly held. The Pasteur Institute continued its work without interruption. Gradually, general practitioners returned, the hospitals were reopened and health services were resumed.

"The French medical press was inundated by publicity. No discrimination was made between legitimate specialties and commercial exploitation. To correct these conditions, the government has appointed as health director not a politician, as was formerly done, but Dr. Serge Huart, a physician. Among the reforms introduced by him is one that may serve as an index of present social tendencies, namely the regulation which prohibits the practice of medicine to those whose fathers were not Frenchmen, unless they themselves have seen service in the French army or made some scientific contribution to the country of their adoption. This law strikes especially at the Jews. In the department of the Seine, nine hundred Jewish physicians will have to terminate their practice at once. Whatever hardships may be involved in this reform, it should be remembered that considerable abuses had crept in under the liberalism of French laws. Alien physicians from all points of the compass, many of whom could scarcely speak French, had abused the privileges shown them by the country by first obtaining a medical university diploma, which does not confer the right to practice, and then converting it with the aid of politicians into a state diploma."

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-SECOND ANNUAL MEETING, SEATTLE, AUG. 24-26

OLD AGE PENSION SYSTEM

SUGGESTED RULES AND REGULATIONS FOR MEDICAL AND DENTAL CARE TO RECIPIENTS OF OLD AGE ASSISTANCE OF WASHINGTON

April 1, 1941.

STATE MEDICAL-DENTAL BOARD

There is hereby created by the State Department of Social Security a State Medical-Dental Board to be composed of four physicians and two dentists, the names to be recommended by the State Medical Association and the State Dental Association respectively, together with a representative of the State Department of Health, the State Hospital Association and the State Nurses Association.

The State Medical-Dental Board shall recommend such further procedures as may be needed and amendments from time to time as experience indicates, for the carrying forward of the proposed program. Such rules shall cover the administration of the program, including agreements with participants, provisions for medical and dental service based on the plan of free choice of doctor and dentist, and shall provide for the establishment of a basic fee schedule.

1. There shall be elected at the first meeting of the Board, a chairman, vice-chairman and secretary, whose duties shall be those usually bestowed upon these offices. The Board may appoint such subcommittees as is deemed necessary by them; however, the actions of those committees shall be responsibilities of the Board.

2. It shall be the responsibility of the Medical-Dental Board to advise with the Medical Supervisor for the State Department of Social Security in matters pertaining to the financing of the program and the keeping of statistical and other reports for the guidance of the program.

COUNTY MEDICAL-DENTAL BOARDS

There shall be created in each county (or in areas representing two or more counties, where more practical), a county Medical-Dental Board to be composed of two physicians and one dentist, the names of whom shall be proposed by the local Medical Service Bureau and approved by the County Medical Society, the administrator of the county welfare department, and a fifth member to be selected by the foregoing persons from among such as the county hospital superintendent, county physician, county health officer.

The names of the two doctors and the dentist so elected or appointed shall be certified in writing by the respective medical-dental groups to the county administrator and to the State Medical-Dental Board. The county administrator, in turn, will so inform the State Medical-Dental Board concerning these three, as well as the appointment of the fifth member of the Board.

1. There shall be elected at the first meeting of the County Medical-Dental Board the officers necessary to conduct the business of the Board, a chairman and secretary.

2. It shall be the duty of such Board to review and approve or reject all agreements entered into or proposed as between the County Medical-Dental Board and doctors and dentists interested to participate in the program, in accordance with the Rules and Regulations of the State Medical-Dental Board.

3. It shall be the duty of this Board to supervise and administer the medical-dental program of its respective county. It shall keep informed on all matters pertaining to the program, and work in harmony with the State Medical-Dental Board.

4. It shall act as an advisory board on policies pertaining to existing medical care agencies, toward the end that the activities and policies of this program may to the best advantage be coordinated with the existing agencies.

5. It shall deal with and pass on problems arising within its county to the end that recipients of the service will be best served consistent with good and adequate care. It shall enforce the Rules and Regulations as adopted by the State Medical-Dental Board, and also adopt ways and means to deal with individual problems.

6. Complaints not satisfactorily adjusted by the County Medical-Dental Board shall be referred to the State Medical-Dental Board.

7. It shall have all bills pertaining to services properly audited and certified as to the correctness of the same by the local or area Medical Service Bureau. It shall disapprove or adjust bills such as those which are deemed by them to be exorbitant, false or technically incorrect.

8. The County Medical-Dental Board may appoint such subcommittees as are deemed necessary by them, such as a dental subcommittee; however, the actions of all subcommittees shall be responsibilities of the local Board.

SUBMISSION OF ORGANIZATION PLAN TO STATE MEDICAL-DENTAL BOARD

After the organization of the County Medical-Dental Board there shall be submitted to the State Medical-Dental Board a list of all members of the local Board, showing the groups they represent.

MEDICAL SERVICE BUREAUS

County Medical Service Bureaus will handle necessary administrative detail in connection with the medical and dental services rendered to recipients of old age assistance other than that connected with hospitalization, nursing care and appliances. This program includes service rendered in the doctor's office and in the home of the patient. It does not include services in behalf of patients who are hospitalized, which service will be rendered through the program already established for providing hospital care for all recipients of public assistance. Appliances and nursing care will be arranged for directly by the county welfare department on the recommendation of the participating doctor, upon the approval of the local Medical-Dental Board.

Medical Service Bureaus may serve for an area comprising more than one county.

The Medical Service Bureau shall be responsible to the County Medical-Dental Board in the rendering of this service, which Board is in turn responsible to the State Medical-Dental Board.

Copies of the Agreement of participants shall be sent by the Medical Service Bureaus to all licensed practitioners coming within the terms of the proposed program.

Such Agreements shall be signed in duplicate by those desiring to participate, one copy to be retained by the local Medical Service Bureau and the original to be forwarded to the State Medical-Dental Board, Olympia, for the use of the State Auditor.

PARTICIPANTS

Any doctor who is licensed to practice medicine, dentistry, osteopathy or chiropractic in the State of Washington, and who shall agree in writing to abide by the Rules and Regulations and schedules as herein provided or as may hereafter be amended, shall be entitled to participate in the program. This does not include persons licensed as optometrists or drugless healers.

AGREEMENT OF PARTICIPANTS

In order that a doctor may participate in this program he shall have signed the following Agreement and submitted it to the local Medical Service Bureau as designated under ————:

AGREEMENT

I, the undersigned doctor of ....County, hereby agree to render professional care to recipients of old age assistance as necessity requires, on presentation of Authorization Cards issued by the Welfare Department of this County. I shall limit the care given to those fields for which I am licensed.

It is understood that all services rendered and the charges therefor shall be subject to approval of the Medical-Dental Board for this County. I agree to abide by the Rules and Regulations and schedules now effective, or as hereafter may be deemed necessary by the State Medical-Dental Board in the administration of this service. It is further agreed that said State Medical-Dental Board shall adopt a fee schedule approved by the State Medical Association which shall apply to any and all services rendered hereunder.

I agree to accept as full compensation for all services rendered hereunder such fees as are adopted by the State Medical-Dental Board, subject to such correction and prorating as may be found necessary by the local Medical-Dental Board.

All accounts which I may render for services performed hereunder are hereby assigned to said County Medical-Dental Board for collection.

In Witness Whereof, I have hereunto set my hand this ....day of.., A.D., 1941.

....

I am licensed to practice as M.D., D.D., D.O., D.C., Chiropodist.

(A clause will be inserted in this agreement permitting either party to cancel upon request).

Penalty for violation of any Rules or Regulations as herein defined, or conduct deemed detrimental to the best interests of this program, shall be the elimination from the list of the name of the violator or party charged. The local Medical-Dental Board having jurisdiction over the member so charged shall interpret the violation or misconduct.

MEDICAL TREATMENT

1. *Availability of Treatment.* In applying for treatment the old age recipient first secures an Authorization Card from the county welfare department. Such card will show the name of the doctor and/or dentist of the recipient's choice. This doctor and/or dentist shall be chosen from a list of those eligible to participate under this program. When the client has indicated his preference as to a doctor and/or dentist he shall continue to go to that doctor until such time as he has indicated to the Medical Service Bureau (or to the county welfare department in those counties in which Medical Service Bureaus are not located) his reasons for changing.

Authorization Cards will be issued for a 90-day period and subject to renewal at the end of that time.

Doctors signing Agreements to participate in the program will be supplied with copies of Form................ by the Medical Service Bureau, which forms are to be used for the doctor's report, diagnosis, and record of treatment given. For reporting to the Medical Service Bureau, see

....

2. *Emergency Treatment.* Emergency treatment, if rendered to an old age recipient who does not have an Authorization Card from the county welfare department, is at the volition of the attending doctor. Such cases shall be reported to the administrator of the county welfare department within twenty-four hours after that office is open and a request made that a medical Authorization Card be issued to the recipient. Only if the patient is receiving old age assistance will the county welfare department issue such Authorization Card.

3. *Distribution of Cases.* In the event the recipient has no choice of doctor, it shall be the duty of the County Medical-Dental Board to provide through the welfare department a fair and impartial plan of assigning cases which may be on a rotating basis, taking into consideration the availability of the doctor and the nature of cases as applies to the doctor's specialized practice.

In the case where recipients were previously treated through public clinics or through county physicians' services* and where they wish to continue such treatment, such arrangements may be continued, but not at the expense of the program.

4. *Availability of Doctor.* The patient may choose his doctor from the eligible list, but excessive mileage will not be allowed when an eligible doctor is near at hand.

5. *Prescriptions.* Prescriptions will not be paid for under this program. Old age recipients will purchase medicine as needed and as recommended by their doctors from their own resources.

6. *Hospital Care.* Inasmuch as hospitalization is not available on a free choice basis, it will be provided where needed and where recommended by the attending doctor through the regular channels already existing, county by county for providing hospital care to recipients of public assistance.

Payment for doctors' services will, therefore, not include service rendered to patients during hospitalization.

TYPES OF MEDICAL SERVICE AVAILABLE UNDER THE PROGRAM

The service rendered under this program will be as follows:

1. *Medical and Optical Care.* This care will include home and office care by the doctor of the recipient's own choice as previously defined.

a. Care of acute illnesses. Care of recipients acutely ill shall be limited to seven visits. If care is necessary beyond this time limit, authorization must be obtained from the local Medical-Dental Board.

b. Care of chronic cases. Care of cases having chronic diseases shall be limited to one visit per week for a period not to exceed three months. Exception to this rule, if any, may be authorized by the local Medical-Dental Board.

2. *Hospital and Major Surgical Care.* This care will be provided through the already existing channels as set up under the general county medical program.

3. *Nursing Care.* This care will be arranged for within the limits of the available funds, through the county welfare departments, upon the request of the attending doctor, approved by the local Medical-Dental Board.

4. *Appliances.* Appliances, including glasses, will be provided through the county welfare department, within the limits of available funds, upon the recommendation of the attending doctor, with the approval of the local Medical-Dental Board.

Medical care shall cover all conditions not otherwise herein exempted and with the exception of those types of cases coming under the jurisdiction of the Public Health authorities.

Fees will not be allowed for the treatment of cases that should be referred to the Public Health authorities.

FEE SCHEDULE

The fees charged for rendering professional care under the medical program shall not exceed the following allowances and shall be subject to prorating where necessary to keep within available funds for the medical care program:

First office or home visit	$3.00
Subsequent home visits	2.50
Subsequent office visits	2.00
Night calls after 9 p.m. to 7 a.m.	4.50
X-rays and laboratory work, except in emergencies, shall be authorized by the Medical Service Bureau and shall be at the State Department of Labor and Industries rates and subject to the same pro-ration as other fees.	
Eye examinations with refraction	5.00
A mileage of 10 cents a mile will be allowed one way irrespective of the number of homes or patients visited.	

Submission of Bills. Doctors must submit not later than the twentieth day of each month to their local Medical Service Bureau two copies of form SF............ properly filled in to show the amount of care furnished each individual recipient during the current month and the charges for that care. Bills not submitted by that date will not be honored.

Auditing of Bills and Payment. The local Medical Service Bureaus will audit all eligible bills and make recommendations to the local Medical-Dental Board concerning the amount of payment to be made on each bill. It shall be at the discretion of the local Medical Service Bureau and the Medical-Dental Board what prorating of bills shall be made in any one particular month in order to keep within avaliable funds and in order to plan for payment of bills in future months. Balances in funds remaining at the end of any month will be carried forward in each county as a reserve fund for use in future months, but not beyond the biennium.

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*Full time county physicians will not be paid fees from this program.

In auditing the accounts, the Medical Service Bureau shall check the rates or amounts charged and check the signature of the client and of the doctor rendering the service, both of which signatures shall appear on the forms provided.

The audited, prorated and approved bill shall then be forwarded to the State Medical-Dental Board and thence to the State Department of Social Security, accompanied by a single voucher to cover the cost of these services, made out in the name of the local Medical Service Bureau. Payment by the State Auditor will be by a single check to the individual Medical Service Bureau. That Medical Service Bureau will then subtract its fee for administrative purposes (not to exceed seven per cent of the total). Following this, the doctors will be paid by the Medical Service Bureaus for the services rendered.

LEGISLATION AFFECTING MEDICAL PRACTICE

The outstanding feature of medical legislation during the recent session of the state legislature was that no bills were passed unfavorable to existing medical practice. More than a thousand bills were introduced in the two houses, of which eleven in the Senate and seven in the House would have been more or less detrimental to the practice of medicine. Some of these passed one branch of the legislature, but either failed to pass the other or were suppressed in committee. There were numerous other bills affecting medical practice indirectly which failed of adoption. Only one bill was enacted directly affecting the practice of medicine, which set up a five-dollar annual license fee. More concerning this will appear in next month's issue of the journal.

Several bills that failed of passage excited much discussion. Senate bill No. 27, known as the Health Insurance Law, would have established socialized medicine. This died in committee. A house bill which would have eliminated use of "Doctor" by various cultists, and prevent their practice of obstetrics, passed the house by a large majority, but finally diappeared when it fell into the hands of the chairman of the senate committee. When called for introduction into the Senate, it could not be found. Although a duplicate copy was accepted, it lacked one vote in the Rules Committee for assignment to the calendar.

The legislators as a whole were conservative, many of them being friendly to established medical practice and consulted their medical friends regarding proposed legislation affecting medical matters. Many considered Speaker Riley of the House as the strong man of the session. He was a loyal friend of established medical practice, and dependable for rational consideration of all measures presented to him. The profession of the state should recognize the part played by Arthur Anderson, executive secretary of the State Association. He was in constant attendance and by his genial personality and discretion in all medical problems acquired the goodwill of legislators and was an active factor in advising members of the House and Senate in their consideration of medical bills presented to them.

ROLL OF HONOR

Under this heading are listed names of physicians of the state who have been called to active duty in army and navy service. Additional names will be recorded in subsequent issues as they shall be reported for that purpose.

Whyte, Kenneth G., Major, Seattle,
116th Med. Reg., Camp Murray, Wash.
Burns, F. J., Major, Spokane,
Medical Detachment, Fort Lewis, Wash.
Willis, Park W., Jr., Lieut. Comdr., Seattle,
Naval Medical Reserve, Seattle, Wash.
Kretzler, H. H., Lieut. Comdr., Edmonds,
Naval Air Station, Seattle, Wash.
Ackerman, Frederick F., 1st Lieut., Seattle,
Station Hospital, Fort Lewis, Wash.
Altose, Alexander R., 1st Lieut., Seattle,
Station Hospital, Fort Lewis, Wash.
Aronson, S. F., 1st Lieut., Seattle,
116th Med. Reg., Camp Murray, Wash.
Baer, Erwin J., 1st Lieut., Seattle,
Station Hospital, McChord Field, Wash.
Campbell, M. Madison, 1st Lieut., Seattle,
116th Med. Reg., Camp Murray, Wash.
Carter, R. P., Captain, Seattle,
116th Med. Reg., Camp Murray, Wash.
Davidson, William M., 1st Lieut., Seattle,
Naval Air Station, Seattle, Wash.
Dennen, Charles, 1st Lieut., Seattle,
Camp Murray, Wash.
Franz, F. W., Captain, Seattle,
116th Med. Reg., Camp Murray, Wash.
Haverstock, Richard T., 1st Lieut., Seattle,
Station Hospital, Fort Lewis, Wash.
Helwig, Carl M., Captain,
Station Hospital, Fort Lewis, Wash.
Miller, Richard, Captain, Seattle,
116th Med. Reg., Camp Murray, Wash.
Parmalee, E. B., Captain, Seattle,
116th Med. Reg., Camp Murray, Wash.
Petersen, Ralph C., 1st Lieut., Seattle,
Station Hospital, Fort Lewis, Wash.
Powell, Archie C., Lieut., Seattle,
Marine Base, San Diego, Calif.
Qualheim, C. B., Captain, Seattle,
Station Hospital, Fort Lewis, Wash.
Ramsey, J. Finlay, Lieut., Seattle,
Naval Med. Res., Stimson Bldg., Seattle, Wash.
Rogge, Edgar A., Captain, Seattle,
Station Hospital, Fort Lewis, Wash.
Rose, Hilton, Lieut. Comdr., Seattle,
Army and Navy Club, Washington, D. C.
Roys, Richard, 1st Lieut., Seattle,
163rd Inf. Med. Det., Camp Murray, Wash.
Standard, J. F., 1st Lieut., Seattle,
Naval Air Station, Corpus Christi, Tex.
Thompson, Roger, Captain, Seattle,
116th Med. Reg., Camp Murray, Wash.
Voegtlin, Walter L., 1st Lieut., Seattle,
Naval Air Station, Seattle, Wash.
Weisfield, Edwin S., 1st Lieut., Seattle,
Fort George Wright, Wash.
Welsh, Clyde, l. H. Q. 6, Seattle,
Marine Base, San Diego, Calif.
Burns, J. K., 1st Lieut., Spokane,
3d Medical Battalion, Fort Lewis, Wash.
Kahn, B. T., Lieut., Spokane,
Navy Air Corps, Coronado, Calif.
Lightburne, W. J., Captain, Palouse,
Station Hospital, Fort Lewis, Wash.
Pohl, Robert L., 1st Lieut., Spokane,
Fort George Wright, Wash.
Southcombe, R. H., Lieut., Spokane,
8th Marine, Camp Elliott, San Diego, Calif.
Sweet, W. H., 1st Lieut., Ritzville,
Station Hospital, Fort Lewis, Wash.

MEDICAL NOTES

Tacoma Surgical Club will hold its annual meeting May 3, with Harry E. Mock, Assistant Professor of Surgery, Northwestern University Medical College, as guest speaker. The day will be devoted to consideration of traumatic surgery. Twenty-three members of the club will participate in the program which will consist of demonstrations and anatomic dissections continuing until 3:30 p.m. when a lecture will be delivered by Dr. Mock. The annual banquet at Hotel Winthrop is set for 6:30, with Leo J. Hunt as toastmaster. There will be an address by Dr. Mock.

Omak to Have New Hospital. Dominican sisters have announced plans for a new thirty-bed hospital to be built in Omak next fall. It is expected that the new hospital will be about the same size as St. Martin's hospital at Tonasket and will cost approximately $75,000.

Psychiatric Wing Dedicated. New Shadle Memorial Building at St. Luke's Hospital at Spokane was dedicated February 14. A large group attended the meeting which was addressed by Lawrence Selling of the University of Oregon. Features of the new building are the nurses' call system, window designs with special locks, sound-proof ceilings and a modern hydrotherapy department. It is designed to care for seventy patients.

Congressman Seeks Vet Hospital. Congressman Warren G. Magnusson recently introduced a bill in the House of Representatives providing for construction of a veterans' hospital in western Washington, at a cost of $1,500,000. Fort Lawton has been suggested as a possible site.

Hospital Plans Addition. Virginia Mason Hospital, Seattle, plans a two-story addition to its present west wing, at an estimated cost of $60,000.

Nurses Home at Ellensburg. Plans have been drawn for a nurses' home at the Ellensburg General Hospital.

Hospital Staff Elects. At a meeting of the staff of Deaconess Hospital, Spokane, March 11, L. A. Parsell was elected president, R. P. DeRiemer, vice-president, and R. J. Sprowl, secretary-treasurer.

Official Positions. C. L. Longstreth succeeds I. W. Powell as health officer at Bellingham. His place on the city health board was filled by S. R. Boyton. Russell L. Baker was reappointed health officer for Klickitat County.

Locations. Bernard J. Pipe, former intern and resident at King County Hospital, Seattle, has joined the Riverview Clinic at Raymond. E. H. Hopkins, formerly of Coulee City, has moved to Washtucna. E. L. Botts, formerly of Walla Walla, has located at Stanwood. Robert H. Finley, formerly of Wenatchee, has opened an office for practice in Chehalis.

OBITUARIES

Dr. Harry Feagles of Chehalis, died March 12, aged sixty-five. He was born in New Jersey and received his medical education from the Lincoln Memorial University Medical Department, Knoxville, Tennessee, graduating in 1909. He had practiced in Washington since the year of his graduation.

Dr. James H. Bartley of Zillah, died February 12 of a heart attack, aged seventy. He graduated from Rush Medical College, University of Chicago, in 1900. He practiced for a short time in Cle Elum and moved to Zillah in 1901. He had practiced constantly until eight years ago, when he retired because of a coronary attack.

Dr. Gustave Lewis of Ravensdale, died March 3, aged sixty-seven. He was a graduate of University of Bishop College Faculty of Medicine, Montreal, Quebec, and obtained his degree in 1895.

SOCIETY MEETINGS

KING COUNTY MEDICAL SOCIETY

A meeting of King County Medical Society was held in the Medical-Dental Building auditorium, Seattle, March 3, with President Weichbrodt presiding.

Samuel Lippman and William E. Russell were elected to membership. Applications were read from N. W. Brown and J. J. Mattes.

Joel W. Baker read a paper on "Total Gastrectomy for Diffuse Superficial Carcinoma." A case was reported illustrating the operation and its technic was explained in detail. William Y. Baker presented a paper on "Present Status of Active Therapies of the Psychoses." Technic was discussed of convulsive therapy by insulin, metrazol and electrotherapeutic measures. Edward D. Hoedemaker read a paper on "Present Status of Treatment of Neuroses." He analyzed various methods in use in Europe and this country, pointing out their limitations.

Joel Baker's paper was discussed by Ralph Loe and David Metheny. Papers of W. Y. Baker and Dr. Hoedemaker were discussed by Frederick Lemere and John Blackford.

LEWIS COUNTY MEDICAL SOCIETY

Regular meeting of Lewis County Medical Society was held at Chehalis, March 10. The meeting was addressed by George W. Freeman of Seattle, who spoke on "Fractures of the Hip," and A. C. Jordan, also of Seattle, on "The Handling of Certain Eye Problems."

WALLA WALLA VALLEY MEDICAL SOCIETY

March meeting of the Walla Walla Valley Medical Society was held at the Marcus Whitman Hotel, Walla Walla, March 13. Herbert E. Coe of Seattle discussed "Preoperative Care and Sequence of Operations for Cleft Lip and Palate." The meeting was also addressed by A. E. Ramaker, dentist of Seattle, who discussed "The Prevention and Correction of Common Oral and Nasal Deformities During Infancy." He brought with him the very fine display of manikins and models he had prepared illustrating these deformities and their correction. This display is now the property of the United States Army.

YAKIMA VALLEY MEDICAL SOCIETY

March meeting of the Yakima Valley Medical Society was held at the Commercial Hotel. Yakima, March 10. Guest speaker was Thomas Joyce of Portland, who spoke on "Recent Advances in Surgery of Appendicitis." Incorporation of the society as a nonprofit organization was approved by the membership.

IDAHO STATE MEDICAL ASSOCIATION

1893

FORTY-NINTH ANNUAL MEETING, SUN VALLEY, JUNE 18-21.

ROLL OF HONOR

Under this heading are listed names of physicians of the state who have been called to active duty in army and navy service. Additional names will be recorded in subsequent issues as they shall be reported for that purpose.

Van Dorn, R. W., Major, Coeur d'Alene,
Camp Murray, Wash.
Privett, Lowell B., Captain, Boise,
Station Hospital, Fort Lewis, Wash.
Goodwin, Ralph A., 1st Lieut., Emmett,
3d Med. Battalion, Fort Lewis, Wash.
Bovenmyer, Earl S., 1st Lieut., Pocatello,
Presidio of Monterey and Fort Ord, Calif.
Guyett, Harvey E., 1st Lieut., Idaho Falls,
Fort Lewis, Wash.
Sawyer, Malcolm H., 1st Lieut., North Twin Falls,
Station Hospital, Fort Stevens, Ore.
Bischoff, George H., 1st Lieut., Boise,
Buckho Ranch, March Field, Calif.
Coats, R. M., 1st Lieut., Weiser,
3rd Division, Fort Lewis, Wash.
Brudge, Bruce, 1st Lieut., Boise,
Station Hospital, Fort Lewis, Wash.
McQueen, M. B., 1st Lieut., Lewiston,
Fort Wright, Wash.
Towner, A. A., 1st Lieut. Nez Perce,
Fort Wright, Wash.

LEGISLATIVE AFFAIRS

At the recent session of the Idaho legislature, a bill was passed including an appropriation of $85,000 for remodeling of buildings of the Gooding College, for conversion into a tuberculosis hospital. Another bill of general interest to the medical profession was one which limits the sale of barbiturates and sulfonamide compounds to prescription only.

Bills to permit osteopaths to practice surgery and to license naturopaths were defeated. A bill to create an infantile paralysis hospital at Lava Hot Springs was also defeated. The uniform pharmacy act was introduced by the state druggists association. It would have required every doctor who dispensed medicine to obtain a permit from the board of pharmacy. It was defeated in the senate.

MEDICAL NOTES

Dinner Honors Stewart. A dinner was given by the board of trustees of St. Luke's Hospital, Boise, on March 18, complimenting the long continued service of James L. Stewart. He has been actively connected with the hospital for thirty-four years and for the past twenty years has been chief of staff. He resigned from this office January 1, 1941. In commemoration of this period of service he was presented with a wrist watch appropriately engraved and with a plaque showing early pictures and present-day photographs of the hospital.

Hospital Opens Addition. A new wing at St. Joseph's Hospital, Lewiston, was opened to patients in February. Hospital capacity was increased by thirty beds. The new section is replete with bright colors, attractive room furniture and fluorescent lighting.

Hospital Site Offered. Mrs. W. E. Borah, widow of the late senator, has offered a fifteen-acre tract of land near Boise for construction of a state tuberculosis hospital. Offer was made to the Idaho Anti-Tuberculosis Association through Mr. C. C. Anderson, a merchant in Boise.

Gritman Hospital Gets Inhalator. Kiwanis Club of Moscow has presented a $400 inhalator to the Gritman Memorial Hospital.

Nampa School Director Changed. Director of state charitable institutions has removed C. R. Scott as superintendent of Nampa school and colony and appointed Charles Lowe of Boise to fill the position.

Appointed to State Board. M. F. Rigby of Rexburg was recently appointed to the state medical examining board.

Occupational Licensing Board Appointed. A board, composed of six physicians to examine applicants for license in certain occupations, was recently appointed by Governor Clark. They are Albert B. Pappenhagen, Orifino; Joseph E. Baldeck, Lewiston; Harold W. Stone, Boise; W. B. Handford, Caldwell; C. W. Pond, Pocatello; G. C. Halley, Twin Falls. They will conduct medical examinations for persons applying for licenses in any of seventeen occupations for which the law requires licenses in order to practice.

County Determines Cost of Medical Care. County auditor of Franklin County has reported that about one-third of the indigent fund of the county was paid out last year for medical care and hospitalization. Total expenditures were $18,560. Medical care and hospitalization cost about $6,000.

County Physicians Appointed. C. E. Carver of Emmett has been appointed county health officer and county physician of Gem County for the next two years. F. F. Horning has been appointed county physician of Kootenai County.

Hospital Helpers Training School. School for training of girls as hospital helpers under emergency or war conditions has been organized at Boise. They will be taught preparation of food for war victims, care of injured in field hospitals and use of various types of hospital equipment. It is expected that the course will require from nine months to a year. Cooperating agencies are Boise Junior College, National Youth Administration, Boise Veterans' Facility and Idaho State Vocational Education Department.

Locations. Lauren M. Neher, formerly of North Manchester, Indiana, has moved to Jerome, where he has purchased the equipment and practice of the late Charles F. Zeller. Elizabeth Munn, former Caldwell resident and graduate of the University of Oregon Medical School, has opened an office for practice at Caldwell. She has recently completed a three-year fellowship at the Mayo Clinic, Rochester, Minnesota.

CLINICAL FORUM

PROBLEM IN OBSTETRICS

It is with the hope of stimulating interest in obstetrics and pediatrics that cases of actual conditions and situations are to be submitted. It is desired by the Maternal and Child Welfare Committee of Washington State Medical Association that many who read these histories will make free comment, express opinions, also offer solutions of the predicaments.

In the first place, it will be of great interest to receive the solution by a doctor who limits his practice to obstetrics or pediatrics and has at his command a well conducted hospital with laboratory and other equipment, together with an interne personnel; second, views of men located in smaller communities will be instructive; finally, there is the doctor in country districts where work is unlimited in scope. His judgments based on experience, his decisions made on single responsibility, and his final action must of necessity be carried on alone.

We need still better general obstetrics. We have a lack of special attention to pediatric problems, a great part of which must be done through our general practitioners. Their comments and opinions are desired. Actual cases are solicited which may be edited without the names of doctor or patient, to be presented in the same manner as below. No matter how clearly a problem may be declared, there always remains three human elements: the patient, the attending physician and the commenting doctor.

CASE REPORT

Mrs. J. P., para-I, age 23. Came into the office in October, 1939, giving the history of last menstruation the first part of August and that she menstruated ordinarily on the thirty-one-day cycle.

Physical examination disclosed nothing unusual. Her measurements were a little bit under the average, except the Baudelocque's which was 19½ cm. Her weight was 122¾ pounds. Five days before delivery she weighed 142¾. Estimated confinement the second week in May, 1940.

She visited the office eighteen times. Blood pressure ran between 124/60 and 144/84. Albumin appeared twice in small amounts but not after March 20. Two weeks before delivery the fundus rose 34 cm. above the symphysis and the fetus was lying R.O.A.

On May 18 about 6:30 a.m. her membranes ruptured. She came to the office about noon having cramps, head fairly low, cervix long, no effacement, almost one finger dilatation, but the cervix was back of and under the advancing head. She had fairly good pains during the next night, receiving a small amount of sedative.

On May 19 at 10:40 a.m. effacement was complete and the cervix was nearly three fingers dilated. A bag of waters presented and was punctured. Pains continued every four to five minutes all day, during which time she received two drams of paraldehyde at 2:15, 4:30 and 7:30 p.m. respectively. At 9:30 p.m. a vaginal examination was again made. The anterior fontanel was at 1 o'clock, head very hard, moulding poorly, it seemed fixed. The cervix was still anterior to head, not having come around under the arch.

At 1:30 a.m., May 20, pains had almost stopped. A small does of pituitrin was given with no response. About twenty minutes later 5 minims were given, with practically no response. About twenty minutes later 5 minims were given, with practically no response. Another half an hour later 10 minims were given. Pains began to come at five minute intervals, only moderately, not hard. The cervix could be pushed back over the head which was hard, unyielding, but did not advance. The mother's pulse had begun to rise, which under the circumstances seemed to be due to general exhaustion rather than to uterine contractions. The baby's chin was still plainly felt above the symphysis. The mother's general condition was very good but the probability of her proceeding further with the delivery seemed rather slight.

What would you do, and why?

BOOK REVIEWS

An Introduction to Dermatology. By Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. (Edin.) Emeritus Professor of Dermatology, University of Kansas School of Medicine and Richard L. Sutton, Jr., A.M., M.D., L.R.C.P. (Edin.) Assistant Professor of Dermatology, University of Kansas School of Medicine. With 723 illustrations. Fourth Edition. 904 pp., $9. The C. V. Mosby Co., St. Louis, 1941.

Classification of material in this volume includes chapters on virus diseases, the neuroses and metabolic diseases. Descriptions are pertinent and straight to the point. The chapter on diseases of the mucosae adjoining the skin treats each structural surface individually and all known disorders are listed in outline form with discussion of same. Sections on mycoses and syphilis are up to date. By direct reference to the original article the authors have no doubt enhanced the teaching value of their book. The course and pathogenic background of syphilis are directly paraphrased from Stokes. Classification of allergic phenomena, including the atopic, nonatopic, local and generalized reactions is taken directly from Sulzberger. Seborrheic dermatitis is classified under diseases due to fungi because the pityrosporum ovale is present in these cases. Presentation of so much recent information concerning dermatology and allied subjects should offer inspiration to the student and meet approval of the critic. Most references are given at the time of their use, though there is a complete bibliography in chapter form just preceding the index. The book is packed with excellent illustrations. It will be difficult to find a single volume which gives the scope of this specialty more effectively and it can be well recommended to any one interested in this field of study. S. T. Mercer.

Year Book of Industrial and Orthopedic Surgery 1940. Edited by Charles F. Painter, M.D., Orthopedic Surgeon to Massachusetts Women's Hospital, Boston, etc. 484 pp., $3. The Year Book Publishers, Inc., Chicago, 1940.

This book deals with some of the more common orthopedic problems with a brief summary of the more recent surgical and nonsurgical treatments. Chapters consider treatment of infectious bone and joint lesions, intervertebral disk and hypertrophy of the ligamenta flava, congenital or hereditary orthopedic problems. There is a brief summary of the more common fractures with special emphasis on the

For the Local Treatment of Acute Anterior

URETHRITIS

(DUE TO NEISSERIA GONORRHEAE)

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Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae. (1) An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph. Gon. & Ven. Dis., 23, 201 (March) 1939.

*Silver Picrate, is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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The recently erected fifty bed hospital building is equipped for modern methods of diagnosis, medical and surgical treatment of chest diseases.
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The facilities of the institution are available to physicians who wish to use them for the care of their private patients.

possibility of prevention of permanent disabilities by proper first aid and transportation for the injured.

Conclusions reached after the study of a great number of arthoplasties reveal that the best results are obtained in young individuals; persons whose livelihood required hard manual labor are poor functional risks and the most successful cases are those in which ankylosis has been caused by trauma or pyogenic injuries, especially of hematogenous origin. Caution on considering arthoplasty on tuberculous joints is advised because of the danger of lighting up latent infection.

Correct diagnosis in general orthopedic and traumatic surgery is the foundation for correct treatment which leads to relief of pain and, therefore, interpretation of pain must be the guiding principle for prescribing treatment. There are considerations of surgery of tendons, paralytic and spastic conditions and surgical treatment for chronic arthritis. A final and rather comprehensive chapter deals with problems which are brought up in industrial surgery and medicine with an attempt at solutions for some of them.

G. W. Freeman

Diseases Transmitted from Animals to Man. By Thomas G. Hull, Ph.D., Director, The Scientific Exhibit, American Medical Association. 403 pp., $5.50. Charles C. Thomas, Springfield, Ill.; Baltimore, Md., 1941.

This book is written with fourteen contributors, all of whom are leading authorities in departments of agriculture, public health, veterinary science, tropical medicine and allied subjects. Diseases transmitted from animals to men concern all of these classes of workers. There has been no effort to include pathology, clinical symptoms or treatment, but emphasis is placed on epidemiology and means by which infection may be prevented.

The section on diseases of domestic animals and birds includes many well known diseases such as anthrax, brucellosis, glanders, rabies; and others not so well known, as milk sickness, swine erysipelas, luping ill, rift valley fever. Rodent affections include diseases transmitted by lice, fleas and ticks, such as plague, tularemia, typhus fever, Rocky Mountain spotted fever, relapsing fever. Also there are human diseases spread by animals, such as septic sore throat, diphtheria, scarlet fever. An interesting section deals with the role played by each animal in the spread of disease, by cattle, horses, swine, sheep, dogs, cats, rats and others. Reading this book emphasizes the intimate relation between man and animals and the possibility of communicating diseases must constantly be kept in mind and care exercised in mutual relations.

Manual of Clinical Chemistry. By Miriam Reiner, M.Sc., Assistant Chemist to The Mount Sinai Hospital, New York. With 18 Illustrations. 296 pp., $3. Interscience Publishers, Inc., New York, 1941.

This volume aims to include functional and clinical diseases, some of which are scattered through the literature and available only through libraries. While the student becomes familiar with fundamental phenomena and principles, the physician should acquaint himself with the possibilities of biochemical analysis and bioassay. The author attempts to select methods combining greatest accuracy and simplicity. In a volume of this size brevity must be essential. Chapters on blood analysis and urine cover all phases of constituents, with discussions of each presented concisely. Chemotherapy deals wtih sulfanilamide in blood and urine, with methods of application. Function tests apply to kidney and liver, also attention is given to sex hormones and vitamins.

The Doctor and the Difficult Child. By William Moodie, M.D., F.R.C.P., D.P.M., Medical Director, London Child Guidance Clinic and Training Centre. The Commonwealth Fund. 224 pp., $1.50. New York, 1940.

This little book reveals an intelligent understanding on the author's part of the disturbances of behavior characterizing the "difficult child." He is an English psychiatrist with long experience in treating children and has for many years been the medical director of the London Child Guidance Clinic. His sympathetic insight into the point of view of the parent makes the book one of value to the layman as well as the physician. One feels an unqualified confidence in the authority of the statements made with regard to proper handling of a variety of problems. Every member of the medical profession would profit by reading the chapter on enuresis. This book is a contribution to the practice of child guidance which is becoming more exact in its knowledge, sure in its methods and successful in its results.

W. B. Seelye

Hemorrhoids and Their Treatment. The Varicose Syndrome of the Rectum. By Kasper Blond, M.D., Vienna, formerly First Assistant, Rothschild Hospital, Vienna; translated by E. Stanley Lee, M.S., F.R.C.S., Hon. Assistant Surgeon, Westminster Hospital. 140 pp., $4.50. The Williams & Wilkins Company, Baltimore, 1940.

The author of this book stresses especially injection treatment. Of minor importance is the actual solution used, but it is important that preference be given where possible to methods which are ambulatory. The author states that of 3100 cases of piles treated in the previous four to five years, almost one in five had already been treated by operation from one to five times. It is a mistake to believe that injection therapy has supplanted operation since in some cases this is the method of choice. Although recurrence happens in some of his cases, this is much commoner after surgical treatment. Technic is described with solutions which the author prefers. There are chapters on anal fissure, thrombosis and pruritis. Local anesthesia is preferable in treating these cases. Necessary surgery is described in detail. The book is embellished by colored illustrations presenting conditions in realistic manner.

International Clinics. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia. Volume I, New Series Four. 304 pp., $3. J. B. Lippincott Company, Philadelphia, Montreal, New York, 1941.

Original contributions by eleven authors deal, among other subjects, with circulatory disturbances, sulfapyridine in pneumonia treatment, chronic lymphatic leukemia. One-half of the volume is devoted to clinics by members of the faculty of Yale University School of Medicine. These include clinical reports on a variety of subjects. Some of these are curable heart disease, diagnosis of vitamin C deficiency, surgical treatment of chronic pulmonary abscess by lobectomy, intestinal obstruction by gallstones, cardiovascular manifestations of anxiety. These clinical reports consider specific cases with pertinent comments of interest to readers.

NORTHWEST MEDICINE

THE JOURNAL OF THE STATE MEDICAL ASSOCIATIONS OF OREGON, WASHINGTON, IDAHO

ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION

Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879. Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 3, 1917, authorized July 31, 1918.

Vol. 40, No. 5 MAY, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Reprints will be furnished by the printer according to the schedule of prices which accompanies the galley proofs submitted to the author. The order for reprints should accompany the returned galley proofs. The printer holds the type until the first of the following month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

IDAHO ANNUAL MEETING

Annual meeting of the Idaho State Medical Association is to be held in June this year, the dates being June 18 to 21 inclusive. This is a departure from custom and is in the nature of a trial since many members feel that the early summer is a better time to leave the office than in the fall. Some state associations hold meetings in the spring for the express purpose of instructing delegates to the meeting of the American Medical Association which is usually held in June .Such last minute advice has not, however, seemed especially necessary in the Northwest states.

Delightful Sun Valley is again the location for the Idaho meeting. Certainly few states have such a splendid opportunity to hold a meeting where everyone is away from home and can devote himself wholeheartedly to purposes of the convention. Few spots offer so much in recreation and enjoyment for the time after scientific sessions. Ladies of the Auxiliary also find the accommodations at Sun Valley most enjoyable and are busily engaged in sports and sight-seeing trips throughout their stay.

As has been the custom for a number of years the Idaho meeting this year will be featured by a post graduate course given by members of the faculty of a single school. Thus a coordinated course may be given, each speaker tying his remarks in with those of his fellows. The faculty this year is from Stanford University School of Medicine at San Francisco. Speakers are William Dock, Professor of Pathology; David A. Rytand, Assistant Professor of Medicine; Nelson J. Howard, Assistant Clinical Professor of Surgery and Carleton Mathewson, Jr., Associate Professor of Surgery. Full program appears in the Idaho section of this issue.

A splendid record of attendance at the annual meeting has been attained by Idaho in the past and it is expected that more than ever will attend this earlier meeting. Other Northwest states may well envy the accomplishment of Idaho in attracting approximately half of the total membership to its annual meetings. Perhaps the secret is in the quality of the meetings which is seldom exceeded. Perhaps members of the other associations should plan to attend this meeting which promises to be even better than Idaho's previous best.

PLASMA BANKS

Significant advance is being made in current development of the idea of plasma banks. Outgrowth of the valuable principle of blood banks, the plasma bank idea also derives from modern recognition of the role of plasma proteins in maintenance of circulation and in tissue health. The great value of whole blood transfusion has long been known. Only recently, however, has it been fully appreciated that much of the value of such therapy was attendant upon the proteins thus administered. In fact it is now recognized that in certain conditions the addition of cellular elements is contraindicated. Plasma transfusion, therefore, often becomes the treatment of choice.

Hypoproteinemia may readily produce edema due to inability of the circulating blood to maintain osmotic pressure sufficient to hold fluids within the vessel. It may result in delayed healing or actual disruption of surgical wounds. In severe degree it may produce circulatory collapse.

Hypoproteinemia may be induced by shock, burns, intestinal distention. It may be the result of nutritional disturbances or dietary insufficiencies. It may come about through protein loss such as in albuminuria or may develop from a great variety of other conditions. Even in acute hemorrhage, loss of the circulating proteins is fully as important as loss of cells and prompt restitution may be a genuine life saving procedure.

Plasma may be kept for long periods even at room temperature. It does not have to be typed or matched prior to administration. It may be given as quickly and with as little ceremony as saline solution. It may even be given subcutaneously. It is the emergency treatment without peer. It is available commercially. Its preparation in any hospital is relatively simple.

Plasma finds a variety of uses and therepeutic indications which will no doubt expand with its increasing use and with better understanding of the importance of the circulating proteins. Development of plasma banks should proceed in all hospitals since plasma is free from many of the disadvantages of preserved blood. One of its greatest advantages to the small or isolated hospital is the fact that it need not be used within the five to seven day period permitted blood but may be stored indefinitely. Plasma should be made available wherever emergency cases are seen whether in the metropolitan districts or in the smaller community hospitals.

A SILVER ANNIVERSARY

A unique announcement appears on page 3 of this issue. It is announcement of the twenty-fifth anniversary of the post graduate course offered annually at the University of Washington. This good course of instruction offered each summer to the profession of the Northwest has long since passed the experimental stage and has established itself as a valuable feature of the extension division of the University. While some may lament the fact that there is no medical school in Washington it must be recognized that this lack has focused attention on education of the man in practice. Such a procedure seems fully as desirable as education of the medical student if not at times even more important.

With the rapid growth and development of medicine at the present time there is growing an appreciation of the necessity for post graduate instruction. Indeed some think that such education should be made compulsory. Such drastic action should not be needed, however, if this and other courses are well attended upon a voluntary basis.

Attendance at the University course has always been most gratifying and these responsible for it are to be congratulated on their foresight in establishing it and their preseverance in carrying it now to its twenty-fifth year.

"WAR MEDICINE," A NEW JOURNAL

Little by little it becomes apparent that this is becoming a military nation. One of the significant events pointing this out is publication of a new journal, *War Medicine.* Need for the journal was seen when the Division of Medical Sciences of the National Research Council established a Committee on Information.

This committee has charge of gathering and disseminating information on medical care of troops, both in training and in the field, care of those subjected to special environment such as submarine and airplane crews, care of wounds resulting from gunshot and explosion, prevention of epidemics in areas of troop concentration and many other matters important only in time of war.

The journal is edited by Morris Fishbein and published by the American Medical Association. On its editorial board are editors of other publications, medical librarians and representatives of various governmental services. Subjects treated will be of interest not only to the military surgeons but to many civilian physicians as well. Appropriately, the cover stock selected for the first issue is a violent, eye-arresting red.

RESPONSE TO CLINICAL FORUM

Response to the Clinical Forum initiated in the April issue has been sufficient to insure repetition of the feature. Actual cases will be presented, the problem will be stated and the reader will be invited to offer his suggestions, comment or criticism.

Replies to the first problem were most interesting and valuable. One reply, published on page 22 this issue, was an outstanding contribution, vigorous, precise and much to the point. This ably written letter might well serve as a model for future writers to this department. It came from a teacher and authority in the field. Others answered the problem in less vigorous terms but all were constructive and interesting. It is hoped that all who replied were benefited by the effort.

Another problem is given this month, covering a different field of medicine. In the meantime further comments on the obstetrical case or on the replies will be welcomed. A portion of the comment of the committee in charge of this feature follows:

> The case report indicated that there is no cephalo-pelvic disproportion in so far as the inlet is concerned.
>
> With "the anterior fontanel at 1 o'clock" the position is obviously R.O.P.
>
> Such being the case, and with the cervix fully dilated, labor at a standstill and the mother beginning to show signs of fatigue, it would seem logical to terminate the labor by anesthetizing the patient, then rotating the head to an anterior position, either manually or with forceps, and extracting with forceps.
>
> The reason for proceeding as above is that, from the history of the case as given, it would seem to be the simplest mode of procedure with the least likelihood of injuring either mother or child.
>
> Other methods to be thought of would be low cervical section or version. The section would be more dangerous because of possible infection, while version would be difficult and dangerous because of the length of time that the membranes had been ruptured and the probability that the uterus had already firmly contracted down around the fetus, thus making it easily possible to rupture the uterus by attempting version.

ORIGINAL ARTICLES

MINOR AILMENTS OF THE FOOT*

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Both from the diagnostic and therapeutic points of view, purely static derangements of the foot are easier and simpler problems, compared with inflammatory and degenerative changes in the same locality.

Early diagnosis is essential to successful treatment and it is facilitated by three factors:

1. Pain usually precedes deformity.
2. Pain depends upon sensory endowment of the tissues involved and can be simply localized, and, therefore, the circumscribed structures involved can be determined.
3. Morphologic disalignment appears at first as transitory phenomena under weight-bearing stress. For example, the static weak foot or flatfoot.

FUNCTIONAL DEFICIENCIES. PAIN.

How to allocate the source of pain; how to identify the structures involved?

Relaxation and Strain of Longitudinal Arch. Pressure point A, at sole of foot, at inner border of the plantar fascia. This signifies strain on plantar fascia and on short muscles of the foot which take their origin in part from this fascia.

Pressure point B, below the scaphoid and between it and the sustentaculum tali. This corresponds to the stress and strain of the calcaneoscaphoid ligament.

Pressure point C, at the anterior border of the lower surface of the heel. This indicates strain at the point of origin of the short flexors.

Pressure point D, below the tip of the external malleolus. This indicates impingement of the plug of fat and areolar tissue in the sinus tarsi as the foot goes into valgus position under weight bearing.

Relaxation and Strain of Anterior Arch. The first sign of deficiency of this structure is relaxation of the intermetatarsal ligament and intrinsic muscles of the foot. Consequently, pressure points are distributed over a line just proximal to the heads of the metatarsals.

A localized pressure point in metatarsalgia, so-called Morton's toe, is an accentuated pressure tenderness at the base of the third and fourth toes.

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*Read before the Forty-eighth Annual Meeting of Idaho State Medical Association, Sun Valley, Idaho, Sept. 11-14, 1940.

It indicates impingement upon the interdigital nerves. The causal components are a short first metatarsal, hypermobile first metatarsal segment and posterior displacement of the sesamoids. There is deep tenderness at the base of the second metatarsal and callosities under the heads of the second and third metatarsals.

The most frequent complaint is pain in the forepart of the foot on walking, dancing or prolonged standing. One of the earliest and most transient symptoms is a burning sensation in the ball of the foot following activity. This is soon replaced by sharper, more acute pain. In some cases there is sudden spasmodic pain located usually about the heads of the third and fourth metatarsal bones which extends into one or the other of the toes and sometimes up the leg. The characteristic clinical sign is tenderness on deep palpation on the sole of the foot, at about the junction of the middle cuneiform and base of the second metatarsal. High-heeled shoe exaggerates harmful effects of a short first metatarsal bone.

MUSCULAR DEFICIENCY

When muscle strain develops as result of static stresses, it manifests itself, in contrast to the fascial and ligamentous static strains, as diffuse, poorly localized tenderness over the muscle belly. This is in accordance with poorer sensory endowment of the muscle compared with periosteum, fascia or ligaments.

Tibialis anticus. Strain of this muscle manifests itself by unlocalized, diffuse tenderness over the belly of this muscle, lateral to the lateral border of the tibia on the anterior surface of the leg.

Strain of tibialis posticus, behind the posteromedical border of the tibia, along the run of this muscle.

Strain of flexor of big toe, which follows the undersurface of the big toe and the first metatarsal to behind the external malleolus and up on the posterointernal surface of the calf of the leg, posterior to the course of the tibialis posticus.

MOROPHOLOGIC CHANGES IN FORM AND ALIGNMENT

Changes in form in acquired static deformities appear as a rule secondary to localized pressure points. These deformities are at first transitory, i.e., they appear under weight bearing only. Later they become fixed by structural changes so that the foot appears deformed at rest as well as under weight stress. This point is of the greatest importance for the plan of treatment.

LONGITUDINAL ARCH

Transitory deformity. The ankle pronates under weight bearing. A pronated ankle does not mean a pronated forefoot. Pronation of the ankle, i.e., back part of the foot, is combined, unless the foot is fixed, with a compensatory supination of the forepart of the foot.

The longitudinal arch flattens under weight bearing. The astragalus, resting upon the relaxed and extended calcaneoscaphoid ligament, pushes with its head forward, downward and inward, thereby producing a flattened arch and convex median border of the foot.

The forefoot becomes abducted under weight bearing. Abduction of the forefoot is the result of disalignment due to relaxation of the midtarsal articulation. The break occurs in the midtarsal joint.

The forefoot is twisted in supination under weight bearing. This disalignment is only relative, namely, in respect to the pronated ankle already mentioned. Due to this compensatory supination of the forefoot against the pronated backfoot, the whole foot appears twisted about a longitudinal anteroposterior axis.

PERMANENT OR FIXED DEFORMITIES OF STATIC FLATFOOT

Spastic or rigid static flatfoot. Reflex reaction to painful ligamentous and muscular structures, as well as gradual adaptations of the antagonist to pathologic positions sooner or later makes the deformity fixed by muscle contractures. It is the stronger group of the peronei (pronators) and extensors of the toes which prevails, and this affects not only the longitudinal arch but even more so the metatarsal phalangeal region. It is a factor in hallux valgus and hammer toe deformities.

Skeletal deformity. From here it is only one step to deformation of the skeleton itself; the osseous flatfoot, a product of gradual adaptation of the bones of the foot to changed static conditions. Naturally, it acquires its greatest extent in those cases in which the deformity sets in early, for instance, in congenital or juvenile static deformities. In the adult, bone resists gross deformation, but there are found often osteoarthritic changes due to strain and expressed by marginal osteophytes.

STATIC DEFORMITIES OF TRANSVERSE ARCH

Transitory.

The situation resembles that of the transitory depression of the longitudinal arch under weight bearing, except that the transverse arch is not really concave as is the longitudinal but it becomes depressed under weight stress and it is relaxed.

Fixed.

Hammer toes. This position becomes fixed by retraction of the toes (hammer toes), due to contracture of the extensors or, in severe cases, by displacement of the basal phalanges of the toes upon the dorsum of the metatarsal heads, or even upon the dorsum of the metatarsal necks. They "ride" the metatarsals.

Hallux valgus. This is an outward deviation of the big toe with the formation of overgrowth of bone or exostosis. Bursitis develops in the region of the big toe joint which causes a bunion. The sesamoid bones are very often displaced so that the outer one will come to lie in the intermetatarsal space. The cause of the condition is very often hereditary, but very frequently it is caused by short or pointed shoes.

Symptoms are pain, intense, and present all the time when shoe is worn, redness and swelling of the involved region.

Hallux valgus or abduction of the great toe is due to mechanical, ligamentous, muscular or osseous causes. The roentgenogram reveals a distinct angular divergence of the first metatarsal bone from the second, a wedging of either the internal cuneiform or the proximal end of the metatarsal.

Hallux rigidus is due to limitation of extension movement of the big toe joint, the chief causes of this being acute injury, prolonged trauma or arthritis. Over the metatarsophalangeal joint there is a ridge and in many cases complete rigidity.

STATIC DEFORMITY OF OS CALCIS. SPURS

Although there are various other factors causing spurs, such as infection (often gonorrheal), metabolic disturbances (especially of gastrointestinal origin), static and mechanical elements such as trauma, improper shoes, other static conditions such as flat feet and a short plantar fascia are often responsible. Symptoms are pain, tenderness, swelling, limp; tenderness is usually along the medial border of the os calcis or at the attachment of the plantar fascia.

TREATMENT OF STATIC DEFORMITIES OF FOOT

Longitudinal Arch.

There is a functional deficiency of the soft structures as evidenced by pressure points. Deformation occurs only under weight pressure. The deformity is not fixed. Such diabilities can be often managed by external means and call for operative reconstruction only in inveterate cases.

The plan of treatment consists: (a) in maintaining the normal form of the foot when weight is borne; and (b) in restoring the tone of the supporting muscle and ligaments.

The Static Weak Foot.

1. *Correction of form.* Well selected and well fitting shoes to support the foot are the basis of whatever corrections are to be made. The shoe must have a straight last, rigid or semirigid shank and a round toe. The heel should be of moderate height. While children do not necessarily have corrective shoes, it is important that all children be properly fitted with shoes that are correct. Support of the longitudinal arch is accomplished by felt or rigid or semirigid insoles fitted to the hollow space between the arch of the foot and the sole of the shoe.

Pronation in the subastragaloid joint is further corrected by an inner wedge in the heel, ⅛ to ¼-inch thick. Supination-torsion of the forefoot is corrected by a wedge along the outer border of the sole which forces the forefoot into pronation so that the big toe rests on the ground.

2. *Reeducation of muscles.* For the reeducation of the muscles exercises are most important. A set of exercises must be given to the patient designed to develop both the tibalis posticus and flexors of the big toe muscles as well as the flexors of the other toes. Besides these exercises, certain activities are very useful, such as roller skating, etc.

FIXED DEFORMITY AS WELL AS FUNCTIONAL DEFICIENCY

1. *Rigid flatfoot.* The rigidity is due to muscle contracture.

Correction of form. The plan is as follows: Overcorrection of the valgus deformity under anesthesia by placing the hindfoot into supination and the frontfoot in pronation; application of a plaster cast for four weeks, to be followed by insoles and cleats as described above. To this a T strap iron is added in more advanced cases.

In more rigid flatfeet, forcible manipulation is added under anesthesia; corrective plaster cast, followed by proper support, as above.

If simple forcible manipulation is insufficient, lengthening of the peroneus tendons and the extensors of the toes must be carried out.

In muscle-bound feet with marked structural shortening of the tendoachillis, one may add to this the lengthening of this tendon. All these steps are decided on while the patient is under anesthesia.

After the cast has been removed and as soon as the patient is permitted to bear weight with shoe corrections and supports, reeducation of the muscles begins according to plan outlined above.

2. *Rigid flatfoot.* The rigidity is due to skeletal deformity.

The condition requires more or less extensive bone operations. Before such are contemplated one should be reasonably sure that the operation will result not only in improvement of form but also in improvement of function. In many inveterate and rigid static flatfeet the structures have adapted themselves and, if there are no subjective signs, one should be very loath to operate. Too many operations are carried out for cosmetic reasons only.

There are two operations which might be considered under these reservations:

1. The operation of Gleich. It is an oblique osteotomy of the os calcis which corrects the valgus position of the heel. Note that it does not correct the valgus slant of the subastragaloid joint. Correction is only apparent but it improves the strain on the supinatory muscles of the foot.

2. The wedge osteotomy between scaphoid and os calcis; base of the wedge is medial and plantar. It improves the convexity of the inner border and increases the height of the arch.

The foot can be molded into normal shape but there is functional deficiency which cannot be recovered by muscle reeducation. The foot remains permanently relaxed and continues to be deformed under weight.

For the relaxed flatfoot which yields passively to corrective appliances but does not become reeducated, the following operations are recommended:

1. The Miller operation for pes planus, which consists of an osteoperiosteal flap from over the scaphoid and cuneiform. This flap is strongly pulled forward, thereby obliterating the convexity of the inner border of the foot.

2. The Hoke operation for pes planus. The operation produces an arthrodesis between the scaphoid and cuneiform.

We recommend this operation with transposition of the tibialis anticus, by which this muscle is replaced under the scaphoid, fastened by drill holes.

3. For the cases of flatfoot due to accessory scaphoid or so-called "prehallux," in which the tendon of the tibialis posticus has slipped forward and dorsally over the scaphoid, we recommend the operation of Kidner. It consists in transposing the posterior tibial tendon backward on the under side of the foot and removal of the accessory scaphoid at the same time. In addition, the tendon of the tibialis posticus may be shortened.

TRANSVERSE ARCH

Functional disability. Anterior metatarsalgia. Treatment consists of proper shoes and shoeing, metatarsal support, as well as physiologic restoration of power of the supporting structures of the arch. Patient is afforded considerable temporary relief by adhesive strap around the waist of the foot.

In intractable cases that resist conservative treatment, operation of Knida should be recommended, which is an operation for metatarsalgia and splay foot, consisting in osteotomy of the heads of the first and fifth metatarsal bones and encircling the metatarsus with a flat fascial band.

Fixed deformities: Claw-toes and hollow foot. The condition may still be amenable to conservative treatment so far as the subjective symptoms are concerned. Distress is mainly due to stress upon the anterior arch and support of the longitudinal arch is necessary as well as the anterior bar in order to relieve the latter completely of weight pressure. If relief is not complete, correction of deformity requires the following steps:

Correction of the claw-foot by operation of Hibbs. Tendons of the extensor digitorum longus are divided and their proximal ends inserted into the lateral cuneiform bone; or, by the operation of Jones-Sherman: these tendons are inserted into the shafts of the metatarsals.

These operations should be preceded by stripping of the os calcis and wrenching. In the more extensive cases an osteotomy of the dorsum of the foot with dorsal base is added to the stripping of the os calcis. The base of the wedge usually includes the posterior portion of the astragalus and adjacent portion of the scaphoid. This must also be followed by strong wrenching. The tendoachillis must not be lengthened until after the deformity has been corrected.

TREATMENT OF HALLUX VALGUS

Not all cases of hallux valgus need operation. In older people or milder cases one should first try to give the patient comfort by strongly supporting the longitudinal arch and protecting the transverse arch by a felt pad, applied to a well-fitting, properly selected shoe.

For relief of hallux valgus many operations have been devised. In order to correct the deformity completely and not produce a stiff joint, I recommend several types of operations, according to the nature and degree of deformity:

1. In milder cases the operation of Silver. This consists in removal of the exostosis and formation of a subperiosteal flap with distal base on the inner side of the big toe joint, section of the outer portion of the capsule and correction of the abducted toe by pulling and fastening the flap strongly upward at the neck of the metatarsal, where the bursa is sutured with strong chromic gut.

2. In more extensive cases with definite hallux valgus deformity but where there are no arthritic changes, I recommend the operation of McBride. In this operation an incision is made between the first and second metatarsals; the joined head of the abductor hallucis brevis is separated from the base of the metatarsal and is then reimplanted into the metatarsal. At the same time the lateral sesamoid which is left between the metatarsal bones is resected; and, finally, from a second medial incision the exostosis is removed. In the case that the extensor tendon of the big toe remains too tight, the extensor should be lengthened but never cut.

3. For severer cases, especially those showing osteoarthritic changes in the joint I use the Mayo-Hueter bunion operation. Here, all or part of the metatarsal head is removed and the osteoperiosteal flap is interposed between the shaft and the base of the first metatarsal.

4. The operation of Keller-Brandes for the same type of cases consists in the resection of one-fourth to one-half of the base of the metatarsal and straightening of the toe.

5. Hohmann's wedge osteotomy of the metatarsal is an adjuvant to the operations of Silver and McBride.

TREATMENT OF HALLUX RIGIDUS

Hallux rigidus limits extension of the big toe and causes painful strain at the joint. If it is not relieved by anterior metatarsal bar and a longitudinal arch support, an operative procedure is necessary. The operation, as in hallux valgus, consists in trimming of a portion of the head or, better, in removal of a part of the shaft of the basal phalanx to give free space to the extension range of the big toe. Resection of the dorsal exostosis on the head or the basal phalanx alone is never sufficient.

TREATMENT OF STATIC HAMMER-TOE AND CLAW-TOE DEFORMITY

Indication for operation is painful callus not relieved by usual support of the anterior arch. With the exception of the fifth toe, it is a mistake to amputate these toes. The operation of choice is resection of the midphalangeal joint of the toe. Tenotomy of the flexors, even combined with operation on the capsule, is seldom sufficient. An exception is to be made in case of an overriding fifth toe. It can be removed without detriment to the static demands on the foot.

Frequent exostoses which are seen at the heads of the fifth toes, the so-called "bunionette," are easily taken care of by resection, an operation similar to that of Silver's method as used for the big toe joint.

TREATMENT OF SPUR OF OS CALCIS

The treatment of this condition should be primarily conservative. It consists in supporting the longitudinal arch by a rigid insole, so that the whole foot is lifted up and all weight is borne by the arch. The part of the support under the heel must be cupped out. In addition to this, a metatarsal bar protects against stress upon the metatarsophalangeal joint.

Only in resistant cases should one think of removal of the spur, but it should be remembered that about 50 per cent of these removed spurs recur. In extreme and recurrent cases we have resorted to an operation of rotation of the posterior process of the os calcis. The tendoachillis is first lengthened. Then a curved osteotomy is performed on the posterior process of the os calcis and a niche is prepared on the under side of the os calcis. The fragment is then rotated so as to engage the spur projection into the niche. The fragments are held in place by pins. The weight now comes to rest upon the posterior instead of the inferior aspect of the heel.

Time does not permit to discuss more unusual conditions as Freiberg's disease, osteochondritis of the metatarsal heads, or Kohler's disease of the tarsal scaphoid and others.

Although the field is wide and conditions vary a great deal in nature and in intensity, recognition of simple basic principles greatly facilitates formulating a rational program for the treatment of static foot deformities. They are as follows:

1. Ascertain whether the deformity is rigid or pliable.

2. If pliable, ascertain if it can be corrected by external appliances when the foot bears weight.

3. If so, ascertain if ligaments and musculature can regain their normal tone by reeducational program. In this event, the case is suitable for conservative treatment.

4. If the foot is not pliable and if signs of soft tissue insufficiency persist, restore the form by whatever measures are necessary, from manipulative correction under anaesthesia to more complicated reconstructive bone operations, and then proceed with the program of muscle reeducation.

5. If foot is pliable, or if form has been restored by operative means, and painful soft tissue insufficiency persists in spite of muscle educational treatment, then and only then resort to tendon transpositions and transplantations. Never do it on people past middle age.

6. Never do tendon transplantation or transposition without simultaneous or previous restoration of form.

NEURALGIA IN POSTURAL FOOT DEFECTS

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Neuralgia is the term employed to describe an irritative phenomenon with pain along the distribution of the anatomic nerve supply. Direct pressure upon or indirect traumatization of a nerve may be the inciting mechanical factors, the irritants, in causation of neuralgias. Reduced functional efficiency or increased functional requirement of the feet lead to postural defects and may occasion a static form of neuralgia.

The foot in stance or in locomotion may elicit pressure directly upon a nerve located adjacent to bony prominences. This may evoke a primary neuralgia. The foot, on excessive weight bearing, may overstretch a nerve, traumatize it along its course over the joints of the tarsus. This may induce a secondary neuralgia.

Neuralgias originating from the foot may be divided according to the site of the irritation into: (1) metatarsalgia, and (2) tarsalgia.

METATARSALGIA

The digital branches of the internal and external plantar nerves, located in the metatarsal interspaces, may be subjected to direct lateral pressure whenever the transverse arch departs from its normal convexity and flattens. These nerves may become squeezed between the adjoining metatarsal epiphyses, when the latter descend from their anatomic position and are subjected to pressure of the ground and to compression of the shoe.

Lancinating, boring knifelike pain may be experienced in the second, third and fourth toes, if the corresponding metatarsal heads are lowered and have compressed the interosseus nerves. Pain of this direct-pressure neuralgia is superposed by tenderness in the fore part of the foot. In view of the continuous exposure to weight bearing and trauma of the ground, the metatarsal heads become inflamed, hence swollen and tender. The swelling, involving the capsules of the metatarsophalangeal joints and the periarticular tissues, fills and narrows the space which the digital nerves occupy. This augments the painful reaction of the irritated nerves.

The neuralgic pain is felt not only peripherally in the toes, but centrally along the course of the tibialis, the peroneus and the nerves of their origin. Hence, pain may be referred into the legs, thighs, small of the back and even in the spine.

Metatarsal neuralgia may be localized, be limited to but one metatarsal segment. Morton's toe is the condition where the pain is referred to the fourth toe only. Paroxysms of excruciating pain radiate from the fourth metatarsophalangeal joint into the corresponding toe. This occurs mainly while in locomotion, but it may also arise when at rest, provided the foot is shod.

The pain is neuralgic in character, piercing and stabbing and is relieved when the shoe is removed and the fourth metatarsal bone manipulated into place.

Morton's toe is caused by pressure of the digital nerve where it passes between the head of the fifth and neck of the fourth metatarsal bones. The narrow shoe exerts pressure on the lateral prominence of the fifth metatarsal head, displaces it mesially against the neck of its neighbor and squeezes the nerve in its fourth interspace. Only in feet with such anatomic variations is this neuralgic effect possible.

Pain may occasionally be referred to the second, less frequently the third toes. This happens when the metatarsophalangeal joints have suffered osteochondritic changes, as in Koehler's and Freiberg's diseases. The space for the digital nerve branches is narrowed by the joint enlargements; the nerves are thereby irritated and pain in the respective toe is germinated.

Proof of the interrelation between the metatarsal neuralgia and descent of the metatarsal epiphysis is established with the restoration of the convexity of the anterior arch. The pain is momentarily abolished. Manipulation of the displaced segment will temporarily alleviate the pain; elevation of the arch by padding or supporting will offer extended relief; operative elimination of the offending lateral bony prominence will permanently abolish the neuralgia.

TARSALGIA

The posterior tibial nerve and its internal and external plantar branches may be exposed to direct irritation, when part of the tarsal skeleton descends and exerts pressure or traction on them. Irritation is manifested in neuralgic pain of various intensity along the peripheral and central distribution of the traumatized plantar nerves. Trauma to the internal plantar may cause pain in three and one-half toes on the tibial side of the foot; injury to the external plantar nerve may produce pain in one and one-half toes on the fibular side. Besides, or even without the peripheral radiation of pain into the toes, neuralgia may be referred upward along the nerve. Pain in the calf, thighs and the small of the back are anatomically determined.

The ankle and tarsal joints are supplied by branches of the tibialis. These are irritated whenever the heel deviates into valgus and the tarsal bones bulge inwards. Pain, originated in these branches, is transmitted upward along the course of the tibialis, the external popliteal and, finally, the sciatic nerves and its ramifications. The severity of the pain is in proportion to the gravity of the foot imbalance. In the early stages of heel torsion pain may be felt only in the external and posterior surfaces of the leg. With advance of the foot defect, pain is referred higher up into the thighs, the buttocks and low back.

Lumbar, dorsal and pain in the nape of the neck can also be attributed to strained or flattened feet, provided correction of the foot imbalance eliminates the symptoms. This is a phenomenon very frequently observed. It may be accounted for either by restoration of spinal alignment or by amelioration of pressure and traction upon the plantar nerves, when the foot is restored to a normal configuration and posture. To determine it anatomically is hardly possible.

DIAGNOSIS

Characteristic for postural or static neuralgia is the fact that pain is alleviated or totally abolished when weight bearing is relieved and the patient becomes recumbent. In long standing neuralgias, pain is only lessened; in recent cases it is completely dissipated in recumbency. Nerve pain which does not change in intensity with the body upright or supine may not be of neuralgic but of neuritic origin.

To aid in diagnosis the application of a therapeutic test is advisable, that is, correct the postural defect and observe the result. Elevate one or more of the metatarsal shafts according to indications; establish correct relation between the fore and the rear parts of the foot; restore the calcaneus from the valgus to the normal varus position and repair any other malalignment in the foot structure. The neuralgic pain should be relieved or at least be greatly helped, if postural foot defects are their causative factors.

727 West 7th street.

COMMON NEUROSES*

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The student of medicine should become thoroughly acquainted with the symptomatology of the neuroses because, of all the disturbances in the realm of medicine, these are likely to prove the most difficult unless properly recognized. The physician knows that this group of patients constitutes a sizable percentage of his practice, yet he sometimes takes the attitude that treatment of disorders of the mind is beneath his professional dignity because it lacks some of the scientific standards laid down for the therapy of other disorders, or that in the neurotic he has encountered some mysterious ailment which neither he nor the patient can understand.

A neurosis represents, in brief, an unconscious evasion of the demands of life. The illness which overtakes the patient is a compromise whereby the individual can maintain a certain amount of self-respect, because the symptoms are more acceptable than the circumstances which produced them. I do not wish to imply that the patient is purposely and deliberately experiencing his symptoms. The physician who approaches these people with the preconceived notion that they are "putting on" their complaints, accomplishes very little. This attitude destroys confidence and interferes with therapy. On the other hand, if the doctor takes the position that these individuals are ill, that they are not trying to deceive him, and that they require more than the average amount of sympathy and understanding, the groundwork for therapy will be established.

Many explanations have been offered for the cause of the neuroses, but attempts to make all cases fit a single etiology usually end in disappointment. Underlying most neuroses will be a badly developed personality which has encountered difficulty in adjusting to its surroundings. Factors most often in operation include heredity, constitution, intelligence, early training, environment and physical disease. The neuroses should be thought of as resulting from combinations of these elements.

In spite of many classifications of the neuroses, none is entirely satisfactory. For practical purposes, most cases can be included in the following groups:

ANXIETY NEUROSIS

This disorder occurs with such frequency as to warrant the title of the "great American neurosis."

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*Read before the Forty-eighth Annual Meeting of Idaho State Medical Association, Sun Valley, Idaho, Sept. 11-14, 1940.

Mild forms are characterized by a state of tenseness, vague restlessness and inability to relax. More severe states produce a sense of impending disaster and fear of insanity or death. The anxiety state may be constant and prolonged, or may come in attacks, with comparative freedom in the intervals. In most instances the individual is unable to define the exact nature of his anxiety, but is usually aware that the condition arises from within rather than from some tangible situation which must be met by apprehension and fear. Predominant symptoms are palpitation, tachycardia, hyperpnea, sweating, fainting, diarrhea and sensations of constriction in the head, throat, chest or abdomen.

NEURASTHENIA

Neurasthenia is a state of irritable weakness. Many neurasthenic patients are extremely tired when they wake up in the morning, feel a little better as the day progresses, and often are at their best in the evening. They become fatigued on slightest exertion. Voluntary effort becomes painful. These individuals complain of poor memory and inability to concentrate. They are sensitive to noise and light. Headaches, dizziness, poor vision, pain in the back, coldness of the extremities, poor appetite, bloating and constipation are some of the more distressing symptoms. Many neurasthenic patients complain of insomnia, and most of them will be underweight.

HYSTERIA

This disorder occurs most commonly in young women. The symptoms are protean, and may be confused with a number of organic conditions. Pains, paresthesias, anesthesias, paralyses, aphonia, blindness, tremors and "convulsions" are some of the well-known manifestations. Bizarre postures and movements are occasionally seen. Less common are examples of fugues and dual personalities. Hysterical individuals are very suggestible, and the production of symptoms through the process of suggestion is sometimes dramatic.

PSYCHASTHENIA

This group includes the compulsion and obsessional neuroses. Individuals with this disorder are likely to have intellectual endowment above average. This condition has many variations, including thoughts of injuring others, fear of contamination or doubts about religion and morals. Hand-washing ceremonials, and counting the number of steps in buildings are a few of the objective manifestations. Usually the patient realizes that the ideas are unnatural, but is powerless to prevent their passage through his mind, and experiences a great deal of anxiety until he can give vent to them through one of the forms of behavior just mentioned.

HYPOCHONDRIA

Hypochondria is a state of morbid introspection devoted to bodily functions. Attention of the patient is constantly fixed on his organs for evidence that something is not working properly. He maintains that his stomach does not digest food correctly, that he has too few or too many stools, or that he passes too much or too little urine. He is constantly occupied with making his organs function properly, and is always seeking medical or quack relief without success.

TRAUMATIC NEUROSIS

Following a serious or trifling accident, the patient develops a train of symptoms characteristic of the neuroses in general. The only reason for including traumatic neurosis in a special group is to emphasize the powerful influence that an injury, with or without litigation and disputes over liability, can play on the production and aggravation of neurotic symptoms. The neurosis ostensibly represents some actual or possible gain to the individual.

DIAGNOSIS

Differential diagnosis of the neuroses presents a number of problems. In the first place, presence or absence of organic physical disease must be established. If physical disease is found, it must be consigned to its proper status, without undue emphasis on noncontributory findings. Overenthusiastic search for possible foci of infection has led to many unnecessary and useless operative procedures. The best defense against mistakes in diagnosis is sound knowledge of medicine, avoidance of snap judgment and consideration of the patient as a whole. Thus, by careful examination, such conditions as hyperthyroidism, diabetes mellitus, Addison's disease, malignancy and similar disorders will be ruled out.

The second problem occurs in connection with those individuals with organic brain disease. In the early stages of cerebral vascular disease, paresis or brain tumor, the physician may be misled into making a diagnosis of neurasthenia or hysteria. The doctor should bear in mind that a neurosis seldom appears in an individual past forty who has not previously shown outspoken neurotic behavior, and should be on the lookout for evidence of failure of memory, decline in efficiency, delusions or hallucinations in his patient.

A third difficulty sometimes arises in connection with the schizophrenic, and the depressed phase of of the manic-depressive psychoses. Incipient schizophrenia can be confused with neurasthenia. The apathy and indifference of the schizophrenic patient, his bizarre associations and mannerisms, the disintegration of personality and the presence of delusions and hallucinations usually will establish the diagnosis. In melancholia there is frequently the history of a previous episode so severe as to have required institutional care. The patient experiences an abnormal depression of mood, sees no hope for himself, is physically and mentally retarded, and is often suicidal.

TREATMENT

Treatment should begin during the first contact with the patient, and should continue after the immediate symptomatology is relieved. The personality of the physician, the rapport which he establishes with the patient, and the suggestibility of the individual under treatment are factors which are constantly in operation. Before intensive therapy is begun, it is well for the physician to evaluate the particular assets of his patient, making note of the person's emotional and intellectual capabilities, his drives and his conflicts. This method of approach requires a generous amount of time from doctor and patient.

The physician should prepare to be a good listener, because the patient usually must tell his story in his own way. Several hours spent in taking a good history will often save time in the end through the avoidance of misguided and futile therapy. The doctor should resist the temptation to lecture or sermonize to his patient, or to urge the neurotic to "snap out of it." Measures such as reassurance, persuasion and suggestive therapy, though useful in certain instances, have the disadvantage of being temporary in their effects, and of giving neither the patient nor the doctor insight into the nature of the process responsible for the neurosis.

The treatment of choice, then, is one of mental exploration. This method is not a mystic ritual, and does not require elaborate equipment. The objective is to find out what the patient is trying to avoid or forget, and to bring the distressing situation into the open, where it can be viewed objectively. The patient should be helped to face his distressing memories, no matter how unpleasant they may be. He is made to understand himself, to recognize his assets and limitations, and to appreciate what part his emotional storms have played in the production of his symptoms. Success in therapy is gauged not only by the relief of immediate symptoms, but by prevention of relapses through correction of underlying inadequacies of the personality, practical solution of the problems at hand, and cultivation of a wholesome philosophy of life. The practitioner, with his intimate knowledge of his patients as individuals and as units in the family and community, is in an excellent position to recognize the problems of his psychoneurotic patients, and to assist in the solution of their difficulties on a sensible and durable basis.

ACUTE AND CHRONIC GASTRITIS

PATHOLOGIC AND GASTROSCOPIC STUDY*

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Since the advent of the flexible gastroscope our attitude toward gastritis, especially chronic gastritis, has entirely changed. This is evidenced by the recognition gastritis is given in recently published, standard textbooks of medicine. In a survey of the world literature there have been sixty-two articles written concerning gastritis within the past twelve months. A century ago gastritis was considered a common condition, as it was so frequently seen at autopsy. The clinical entity was discontinued when it was decided that the pathologic picture was due to post mortem changes.

Faber,[1] recognizing that digestion of gastric mucosa was due to the action of the gastric juice remaining in the stomach, studied the stomach after fixing the mucosa with ten per cent formalin. There were, besides Faber, other recognized pathologists, such as Konjetzny, Paschkis and Orator, who claimed the stomach normal only when it was without interstitial cell infiltration. As was pointed out by Schindler,[2] in comparing the relationship of histologic and gastroscopic findings, "positive findings in histology do not prove the existence of a clinical disease," and, "the anatomic conception today of chronic gastritis disagrees with the clinical conception." However, there is one type of gastritis which usually has a recognized anatomic foundation for its clinical syndrome. This type was recently discussed by Rivers[3] who states, "the patient who does not give roentgenologic evidence of disease in the upper part of the gastrointestinal tract, but who has symptoms referable to the epigastrium or left hypochondium, which recur at fairly definite intervals following meals, often recur at night, and are relieved by food or soda, even though these symptoms lack the clocklike precision of many peptic ulcers, should be considered to have gastritis; be given treatment for gastritis, and whenever possible, gastroscopic examination should be made."

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*Pathologic slides of Chronic Gastritis were furnished by Dr. Geo. Snyder, Deaconess Hospital, Spokane, Wash.

[1] Faber, K.: Gastritis and its Consequences. Oxford University Press, London, 1935.

[2] Schindler, R.: Relationship of Histologic and Gastroscopic Findings in Diagnosis of Chronic Gastritis: Brief Review. Am. J. Digest. Dis. & Nut., 3:153-155, March, 1936.

[3] Rivers, A. B. and Smith, L. A.: Gastritis Simulating Peptic Ulcer. Am. J. Digest. Dis. & Nut., 7:424-426, Oct., 1940.

Gastritis studied by fixed autopsy specimen or surgically resected stomach cannot be entirely compared to gastritis observed gastroscopically. The main reasons are: (1) the color nuances provided by the circulating blood of the stomach; (2) action of the peristaltic waves can be studied; (3) secretion of the mucosa can be observed as part of the pathologic picture. Thus gastroscopy is a more adequate approach in the study of gastritis.

The generally accepted classifications of gastritis are those which run either an acute or chronic course.

ACUTE GASTRITIS

Acute gastritis may be divided into three types: simple, corrosive and phlegmonous. Simple gastritis was undoubtedly the type William Beaumont described as early as 1833. This remains today as a classic example of acute gastritis. It is possible that exposure of the gastric mucosa by the open fistula increases the irritating elements so that all of the disease could not be blamed on the dietary indiscretion. Corrosive gastritis is the type found in cases of suicidal intent or accidental swallowing of any strong chemical. Phlegmonous gastritis is an infectious process usually pyogenic, following a blood stream infection where small abscesses are found in the submucosal layer of the stomach.

Treatment of acute gastritis is symptomatic: rest, suitable diet and, in corrosive types, any specifics which might be indicated. The phlegmonous type must not be gastroscoped. Treatment consists of removing the offending organisms or improving the patient's resistance sufficiently to withstand the toxicity of the invading bacteria.

CHRONIC GASTRITIS

Robertson[4] points out that chronic gastritis should be used only with a qualifying adjective which should signify either a clinical or pathologic condition. With this I am in full agreement. The best means by which the clinician can diagnose chronic gastritis is by a gastroscopic examination. Without going into the symptoms of gastritis or indications for a gastroscopic examination, the types of chronic gastritis usually accepted and the gastroscopic picture will be discussed.

It may be well to describe the normal gastric mucosa. Epithelium on the surface reaches down into the crypts to the bottom of the gastric pits. At the neck it joins the cells of the tubules which are composed of parietal and chief cells. Normally there is not interstitial tissue or round cell infiltration. Gastroscopically the mucosa is smooth, shining, gives the appearance of orange-red satin and has highlights caused by the artificial light from the gastroscope. The mucosa is moist and movements may be observed caused by respiration, pulsating arteries and peristaltic waves. Folds seen in the wall of the stomach are variable. You may note the lesser curvature being almost without folds, the anterior wall showing a delicate network of folds, the posterior wall having thick parallel folds often branching into one another. The greater curvature presents parallel folds and toward the cardia a mucous lake is usually present.

Chronic superficial gastritis presents a surface epithelium not entirely intact. Some cells might be vacuolated and cloudy swelling observed. Cellular infiltration is marked and the capillaries are large and may be broken, causing some hemorrhage (fig. 1). Gastroscopically there is reddening of the mucosa which looks edematous, moist and with very adherent mucus. This thick inflammatory exudate may be a grayish-white to yellowish-green in color.

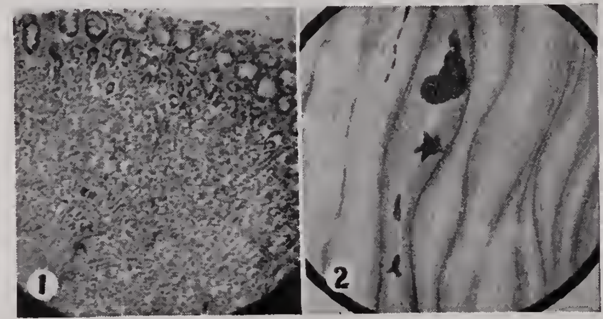

Fig. 1. Chronic superficial gastritis showing round cell infiltration separating gastric pits.

Fig. 2. Chronic superficial hemorrhagic gastritis. Star-shaped hemorrages indicate healing. Grayish- white secretion is characteristic of superficial gastritis.

If there is some bleeding, which is common in superficial gastritis, then it is called chronic superficial hemorrhagic gastritis. These hemorrhages are easy to see and look as if there is a definite, deep, dark, circumscribed red spot or streaks in an already swollen mucous membrane (fig. 2).

Erosions are often seen in superficial gastritis which may or may not be seen with a red halo surrounding them. The erosions are usually multiple and diagnosed by watching the mucosa when the patient breathes, thereby causing the highlights to slide over the mucosal surface. This is known as

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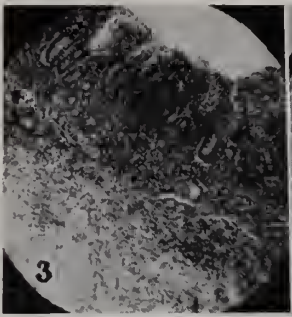
[4] Robertson, H. E.: Ulcerative Gastritis and Residual Lesions. J. A. M. A., 112:22-27, Jan. 7, 1939.



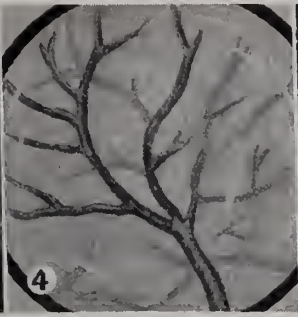
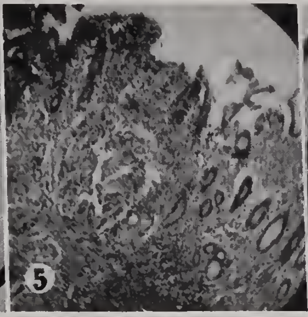


Fig. 3. Chronic atrophic gastritis showing marked thinning of mucosa with interstitial infiltration. Surface epithelium is not too well preserved.

Fig. 4. Chronic atrophic gastritis of posterior wall showing branching blood vessels and increased high lights. There was definite graying of mucosa.



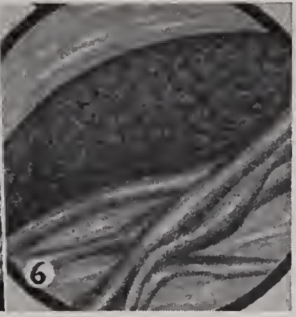


Fig. 5. Chronic hypertrophic gastritis showing profileration of entire mucous membrane with cellular infiltration of interstitium but without decrease of gastric glands.

Fig. 6. Chronic hypertrophic gastritis of antrum showing normal folds within same gastroscopic field.

chronic superficial erosive gastritis and is not to be confused with the aphthous type which is similar to aphthae seen in the mouth.

CASE REPORT

Case 1. E. S., housewife, age 47. Chief complaint, "pain in the stomach all the time." Constipation for the past ten years; this has gradually become more troublesome until "something must be done about it." This vague type of pain is relieved upon eating. There is much rumbling and gurgling in the abdomen.

Physical examination negative; blood pressure, 120/80; pulse normal; abdomen, some tenderness in the epigastrium. Red blood count, 4.10; Hb. 13.5 gm, 78 per cent (Sahli); white blood count, 12,120. Wassermann and Kahn negative, urine negative, sp. gr. 1.025. Stools negative for occult blood or parasites. Gastric analysis (histamine) maximum of 17 clinical units. Roentgenograms of stomach, colon and gallbladder negative. Gastroscopy showed diffuse, superficial hemorrhagic antral gastritis.

Treatment, reassurance, triple bromides and tincture belladonna. Diet, general, with two cooked fruits and two cooked vegetables without roughage. Follow-up gastroscopy six weeks later showed few hemorrhagic spots with improvement of the gastritis. Three months later the examination showed no hemorrhagic spots, the gastritis was very mild and the acid secretion had returned to normal.

Chronic atrophic gastritis is characterized histologically by the surface epithelium having many goblet cells. There is a great deal of cellular infiltration. The glands of the stomach are decreased or entirely absent, depending on the severity of the case (fig. 3). Gastroscopically there is, at a glance, an abnormal mucosa. The orange-red color is gone, the mucosa has a gray or greenish-gray color because of the thinning. This may be seen over the entire stomach or just the antrum. The mucosa may even be patchy. Blood vessels are present, which can be differentiated from mucosal folds because of their color, size, shape and branching. Hemorrhage may also be seen in atrophic gastritis (fig. 4).

CASE REPORT

Case 2. D. B., age 48, housewife, weight 50 kgm. Chief complaint, loss of weight, anorexia, pain starting in the lower abdomen, radiating upwards and to the right shoulder. Pains have bothered her for twenty-seven years. She has had fourteen operations. "Everything removable taken out," besides three exploratory operations.

Laboratory work: Red blood count, 3.20; Hb. 14.5 gm., 85 per cent (Sabli); white blood count, 9,240; urine, negative; Wassermann and Kahn, negative. Stools were negative for occult blood and parasites. Gastric analysis, achlorhydria (histamine proved). Roentgenogram of stomach (gallbladder removed); colon, negative. Gastroscopy showed marked atrophic gastritis.

Treatment: Patient was put on ventrex with tincture of belladonna and phenobarbital. She is gaining weight and feeling better. Follow-up gastroscopy was impossible, but clinically patient reports improvement.

Chronic hypertrophic gastritis shows a marked proliferation of superficial epithelium with interstitial infiltration, even down to the muscularis mucosae (fig. 5). Gastroscopically, this type of gastritis may been seen in any portion of the stomach; mainly, however, it seems to be observed in the antrum. It may be diffuse or patchy. This is the type of gastritis which may give the clinical picture of peptic ulceration, with high acid secretion and ulcerlike pains. The surface mucosa has a velvety appearance with the highlights lessened. It is often observed on the anterior wall and lesser curvature in between the folds. There may be nodules from the size of small granulations to nodes which resemble polyps. If the folds show hypertrophic gastritis, the creases separate the nodules and cut the folds at right angles (fig. 6).

CASE REPORT

Case 3. O. T., male, aged 48. Chief complaint, intermittent pain in the epigastrum for five years. This pain is "made worse after liquor," relieved by vomiting, food or alkalies.

Physical examination essentially without positive findings. Red blood count, 4.20; Hb. 13.2 gm., 75 per cent (Sahli); white blood count, 10,200; urine negative; stools positive with benzidine. Gastric analysis 90 clinical units (histamine). Wassermann and Kahn negative. Roentgenograms of stomach, gallbladder and colon repeatedly were negative. Gastroscopic examination showed chronic hypertrophic gastritis.

Treatment: Patient put on a modified Sippy regime with phenobarbital and atropine. Symptoms were immediately relieved. Follow-up showed relief of symptoms and improved gastroscopic picture.

Postoperative gastritis (surgical gastritis) is another type encountered. It has been shown experimentally by Schindler et al.,[5] that the stomach, if partially or entirely deprived of its blood supply long enough for an entire operation, will show "erosive" and "ulcerative" gastritis. There is no specific type of gastritis seen in the postoperative stomach but attention should be drawn to it since it offers so many problems when it comes to diagnosis and treatment. Gastritis of the postoperative stomach should not be confused with recurrent (marginal) ulcers.

The subject of gastritis would not be complete without mention of its diagnosis by roentgen-ray which is most difficult. This is well summarized by Kirklin[6] "Negative roentgenologic findings do not rule out the presence of gastritis. Only a small percentage of cases can be diagnosed by roentgenologic examination, and the most important sign of gastritis is the presence of localized, ragged, irregular, hypertrophic, mucosal folds." This description does very well for hypertrophic gastritis but little or nothing for superficial or atrophic gastritis. As a matter of fact, roentgen diagnosis of either superficial or atrophic gastritis is very difficult.

CONCLUSIONS

Gastritis has a definite entity, recognizable pathologically and gastroscopically. It may be acute or chronic. The acute is divided into simple, corrosive or phlegmonous types. The chronic is divided into superficial, atrophic or hypertrophic types. Hypertrophic gastritis may simulate peptic ulcer in its symptoms and response to therapy.

Roentgenography is invaluable in ruling out other organic lesions of the gastrointestinal tract but is of little value in diagnosing gastritis. Gastritis should be suspected when all other means of diagnosis are negative and evidence points definitely to a diseased stomach. Gastritis is best diagnosed by gastroscopic examination.

1066 Paulsen Medical and Dental Bldg.

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[5] Schindler, R., Necheles, H. and Gold, R. L.: Surgical Gastritis; Study on Genesis of Gastritis Found in Resected Stomachs with Particular Reference to So-called "Antral Gastritis" Associated with Ulcer. Surg., Gynec. & Obst., 69:281-286, Sept., 1939.

[6] Kirklin, B. R.: Roentgenologic Aspects of Chronic Gastritis. Proc. Staff Meet. Mayo Clin., 14:59-64, Jan. 25, 1939.

CARCINOMA OF CERVICAL STUMP*

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Carcinoma of the remaining or residual cervix after supravaginal hysterectomy is becoming a rather common finding. In the past ten years there have been fifteen patients with this type of cervical cancer who have entered the gynecologic cancer clinic of University of Oregon Medical School. This represents 8.1 per cent of 184 patients with cervical carcinomas who have consulted us during that period of time (to Oct. 1, 1940). Fig. 1.

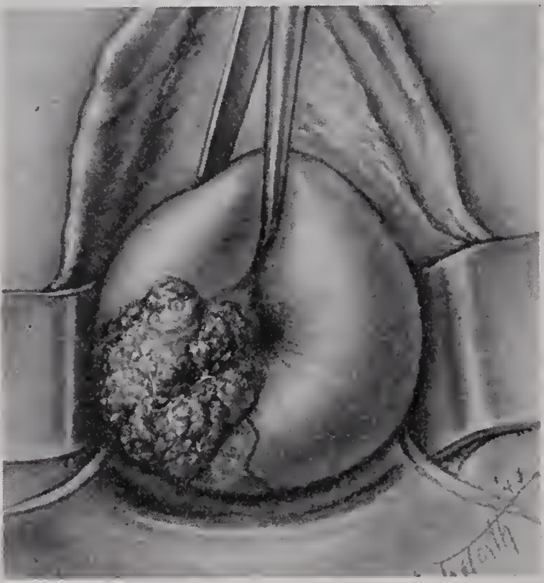

Fig. 1. Carcinoma of surgical stump. Stage 1.

In a review of this subject, Von Graff[1] in 1934 collected and discussed 1169 instances of cervical stump cancer. Meigs[2] in 1936 reported 80 additional cases occurring in two Massachusetts hospitals. Healy,[3] Scheffey,[4] Behney,[5] Ward[6] and others have recently discussed this subject and reported many additional cases. It will thus be seen that cancer of the cervical stump after subtotal hysterectomy follows much more frequently than is generally recognized.

The purpose of this paper is to discuss the incidence and behavior of cervical stump cancer, the status of total and subtotal hysterectomy in treatment of benign conditions, the necessity of the use of diagnostic measures which would prove or disprove the presence of associated carcinoma, and the management of true or primary cancer of the remaining cervix occurring after removal of the corpus uteri.

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*From the Department of Gynecology and Obstetrics, University of Oregon Medical School.

*Read at the annual meeting of Pacific Coast Surgical Society, Los Angeles, Calif., Feb. 21, 1941.

[1] Von Graff, E.: Cancer of Cervical Stump Following Subtotal Hysterectomy. Am. J. Obst. & Gynec., 28:18-32, July, 1934.

[2] Meigs, J.: Carcinoma of Retained Cervix or Subtotal versus Total Hysterectomy. Am. J. Obst. & Gynec., 31: 358-366, Feb., 1936.

[3] Healy, W. P. and Arenson, A. N.: Study of Carcinoma of Cervical Stump Developing After Subtotal Hysterectomy. Am. J. Obst. & Gynec., 29:370-383, March, 1935.

[4] Scheffey, L. C.: Carcinoma of Cervical Stump. J. A. M. A., 107:837-844, Sept. 12, 1936.

[5] Behney, C. A.: Carcinoma of Cervix After Supravaginal Hysterectomy. Am. J. Obst. & Gynec., 40:780-790, Nov., 1940.

[6] Ward, G. G.: Discussion of 5 Supra. Am. J. Obst. & Gynec., 40:787, Nov., 1940.

In studying this problem the first question that comes to our minds is whether or not the neoplasm was present in some part of the uterus at the time the supravaginal hysterectomy was performed. Having available no accurate data regarding the gross or histologic appearance of the cervix at the time of removal of the uterine corpus, only the time factor will allow us to divide such cases into (1) those in whom the cancer was probably present at the time of operation, and (2) patients in whom cancer developed as a primary lesion subsequent to operation. While there is some difference of opinion, most investigators who have studied this problem believe that the appearance of carcinoma in the cervical stump within a year from the time of supravaginal hysterectomy is evidence that cancer was present but was not discovered.

Upon this basis we divided our cases as follows:

a. Cancer occurring within one year: Secondary or persistent cancer of the cervical stump;

b. Cancer occurring after one year: Primary or true stump cancer.

There were seven in the first group (secondary or persistent cancer of the cervical stump). These cases represent patients in whom cancer was present but was either inadequately treated or unrecognized. In some instances the patient either delayed treatment or refused to accept the advice given. The failure on part of the physician to discover cancer in these patients most often resulted from the fact that they were not studied carefully before operation. Recognized diagnostic procedures, such as biopsy of the cervix or diagnostic curettage, would have told the story in most instances. Such errors seemed to have occurred most frequently when fibroids of the uterus were present.

Five of the seven in this group had myomatous uteri. It is our opinion with others that such pathology often seems to overshadow the thought of associated malignancy. One other had metrorrhagia of unexplained origin. After subtotal hysterectomy, the pathologist made the diagnosis, finding cancer involving the upper part of the cervix. Another patient, in whom a diagnosis of carcinoma of the corpus had been made, was subjected to subtotal hysterectomy and cancer promptly recurred in the cervical stump.

Only one patient in the two groups of cases we are reporting in this paper was operated on in our clinic. This case is interesting because we feel that it was properly studied, although because of a diseased cervix, a total hysterectomy would probably have been a better procedure. The patient, aged 50, para-IV, had a metrorrhagia of a month's duration. Examination revealed an indurated uterus enlarged one and one-half times normal size. There was an erosion of the posterior lip of the cervix with associated cystic degeneration. Our senior resident, Dr. Delmar Mitchelson, took a biopsy of the anterior and posterior lip of the cervix and followed this with a diagnostic curettage. Immediate frozen sections of these tissues were reported benign. He then opened the abdomen and found an adenomyoma in the uterine wall for which he did a subtotal hysterectomy. A few days afterward the pathologist, on study of paraffin sections made from the upper part of the cervix, found early carcinoma. Within a month irradiation therapy was carried out. The patient is alive and free from recurrence two years following the operation.

Of these recurrent cancers, the pathologic diagnosis in three was squamous cell carcinoma, in three adenocarcinoma, and one an undifferentiated anaplastic type, probably squamous cell. On entrance to the hospital, only three received adequate irradiation treatment; the other four had been treated elsewhere and the lesions were so extensive that only palliative treatment could be administered. One of the three receiving adequate irradiation is dead, but the other two are living and free from cancer, one two years and one three and one-half years.

The primary group, or true carcinoma of the cervical stump, consisted of eight patients, an incidence of 4.3 per cent. Even in this small number of cases, our percentage nearly parallels Von Graff's incidence of 4.1 per cent in 1169 patients. Meigs found but 2.1 per cent, while Behney reports 4.7 per cent occurring at the University of Pennsylvania Hospital and 2.1 per cent at the Philadelphia General Hospital.

The average age of these patients was 50 years and 10 months or approximately 51 years. A higher percentage of nulliparous women was affected than usual in cervical cancer (28 per cent). This coincides with the findings of Von Graff and Meigs. Four or half of these patients had had a supravaginal hysterectomy performed because of fibromyomatous tumors. As mentioned before, this association is commonly observed.

The time of appearance of these stump carcinomas varied from two to twenty-three years following subtotal hysterectomy. All of these true stump cancers were of the squamous cell type.

The clinical grouping of these patients showed three stage I, two stage II, and three stage IV

(League of Nations classification). One entered the hospital moribund and died shortly afterward; the others received irradiation therapy, with the following results:

Stage I
  1, Living and well, 6 yrs. No evidence of recurrence.
  1, Living and well, 3½ yrs. No evidence of recurrence.
  1, Unable to trace.
Stage II
  1, Living and well, 4 yrs. No evidence of recurrence.
  1, Living and well, 1½ yrs. No evidence of recurrence.
Stage IV
  3, Expired.

The unfortunate and often belated discovery of cancer of the cervical stump raises two pertinent questions: How are such cancers to be prevented? Should the entire uterus be removed where hysterectomy is indicated?

The advisability of routine total hysterectomy in seemingly benign conditions is a debatable question. It is true that it should be the operation of choice if we are to prevent these malignant growths, for cancer of the cervical stump can no longer be considered a rarity. Its incidence, however, following subtotal hysterectomy is less than one per cent. This figure was arrived at by Richardson[7] in a follow-up study of 10,000 supravaginal hysterectomies.

The relative mortality of total and subtotal hysterectomy is of much importance in consideration of this problem but is difficult to estimate. In the hands of experienced pelvic surgeons there seems to be little difference, the mortality in either group being about the same and seldom exceeding 1.5 per cent. This is not true of less experienced operators as shown by Fullerton and Faulkner.[8] In their report of 1851 hysterectomies operated by a score of surgeons, the gross mortality was 4 to 4.5 per cent. In 1078 total hysterectomies, the more experienced surgeons had a mortality of 3.5 per cent in 63 per cent of the cases, while less experienced resident surgeons had 5.2 per cent mortality in the remainder.

This would indicate that routine total hysterectomy by the average surgeon would cause an increased mortality rate far in excess of the incidence of cervical stump cancer. The increased morbidity of total hysterectomy must also be considered. Complications such as hemorrhage, shock, damage to the bladder, ureters and rectum, and fistula formation are not uncommon.

Our policy is to do the total hysterectomy for benign tumors if the patient has a diseased cervix. Cervical lacerations, endocervicitis, cystic degeneration and extensive erosions are known to be predisposing factors in the production of carcinoma. If hysterectomy is indicated in a patient with such accompanying lesions, the entire uterus should be removed, but this cannot be made a hard and fast rule. At times there are technical difficulties which make the complete removal a hazardous procedure; for example, inflammatory adhesions with the uterus fixed deep in the pelvis. The obese woman often offers considerable difficulty in total removal and is frequently a poor surgical risk. Certain patients with complicating heart or kidney conditions may call for rapid and conservative operative procedures. In such patients even in the presence of diseased cervices, the subtotal operation is preferable. At a later time much can be done to make the cervix harmless, by cauterization or a secondary plastic surgical correction. It is our belief that leaving the normal cervix subjects the patient to little risk.

It has became the custom of many to core out the endocervix at the time of subtotal hysterectomy. In this connection, it might be well to point out that 80 per cent of the carcinomas which occur in the cervix have their origin in the vaginal or squamous cell portion. The removal of the endocervical mucous membrane is, therefore, of limited value.

Emphasis should be placed on careful preliminary study of every patient who is to be subjected to hysterectomy. Patients presenting the symptom of intermenstrual bleeding should be suspected of having cancer. This can only be ruled out by careful study of the cervix with biopsy of suspicious areas and diagnostic curettage of the endometrial cavity. Cancer of the corpus is frequently associated with fibroids of the uterus. This is especially true of the woman with a myomatous uterus who has passed the menopause and begins to spot or bleed.

It is a great advantage to know preoperatively whether cancer is associated with the fibroid uterus, for if there is malignancy of the corpus, both tubes, ovaries and entire uterus should be removed. If the malignancy affects the cervix, adequate radiation therapy should be carried out before any further surgery is done. The remarkable research of our colleague, Dr. Frank Lynch, has shown the necessity of this. Another point worthy of emphasis is when a hysterectomy is performed for a benign condition, the uterus should be immediately opened and the endometrial cavity as well as the pathology

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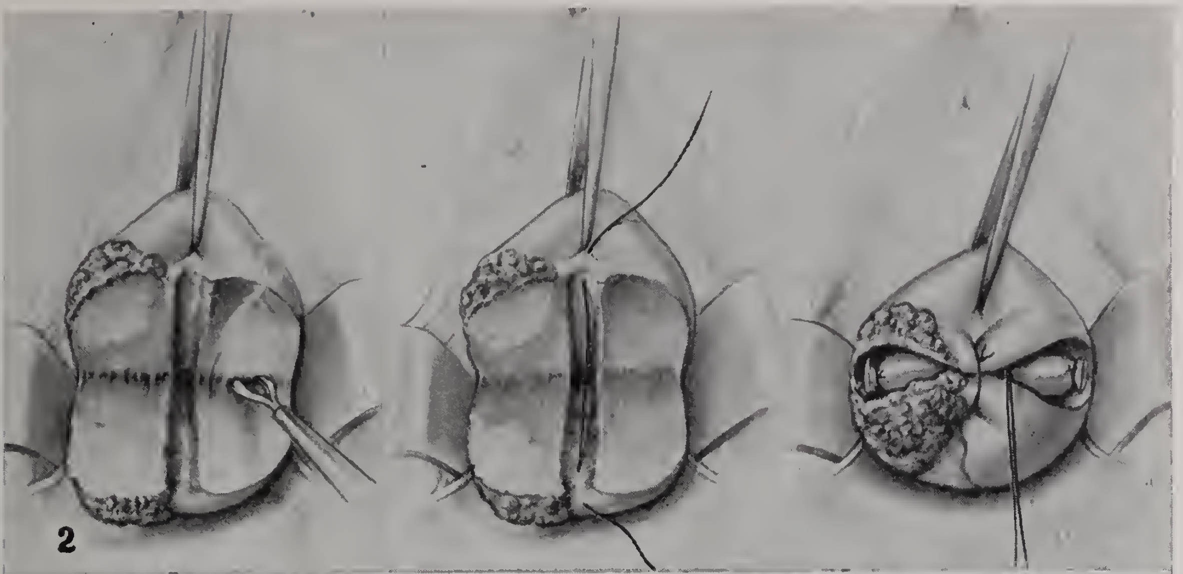
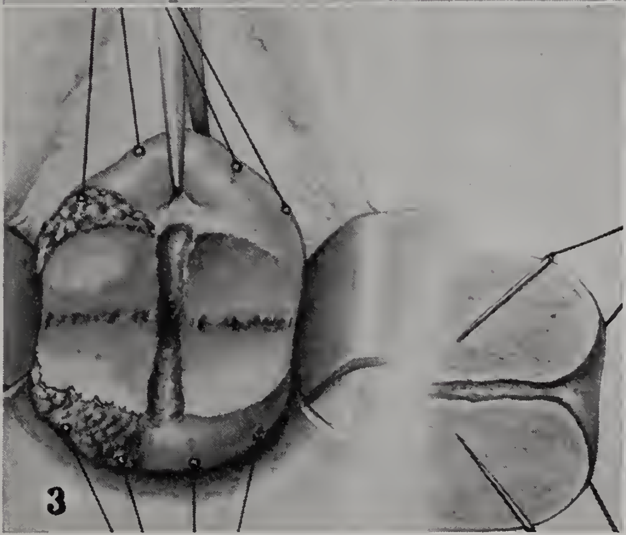
[7] Richardson, E. H.: Total Versus Subtotal Abdominal Hysterectomy in Benign Uterine Disease. Am. J. Obst. & Gynec., 30:237-243, Aug., 1935.

[8] Fullerton, W. D. and Faulkner, R. L.: Hysterectomy; Clinical Investigation of 1851 Consecutive Operations. J. A. M. A., 95:1563-1567, Nov. 22, 1930.





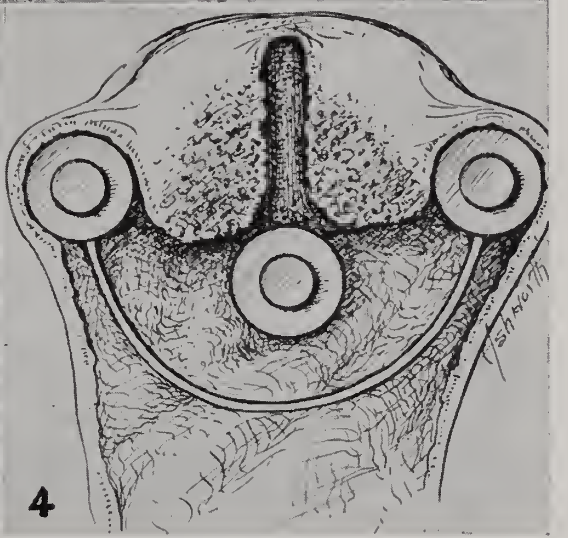


Fig. 2. Steps in method as suggested by Behney. Radium enfolded in split cervix.
Fig. 3. Method of placing radium needles in cervix for carcinoma of cervical stump.
Fig. 4. Colpostat in place. Added irradiation given by this method.

carefully studied before continuing with closure. Any suspicious areas should be biopsied and frozen sections studied. If the remaining cervix is suspected of being diseased, it should be opened and the endocervical mucous membrane inspected according to the method of Curtis.

MANAGEMENT OF STUMP CARCINOMA

Treatment of cancer of the cervical stump varies but little from that of cervical carcinoma where the corpus is present. Radium application and deep roentgen ray therapy is the method of choice. There is more danger of fistula formation owing to the absence of the body of the uterus which acts as a heavy medium of filtration for radio active substances. The likelihood of intestines being in close proximity to the intraperitoneal portion of the remaining stump is always a danger. Also because of the frequent difficulty in protecting the vaginal vault from excessive radiation, there is possibility of vesicovaginal or rectovaginal fistula resulting. These facts have been shown by numerous writers. In our own limited experience only one fistula could be directly attributable to radiation and this occurred between the canal of the remaining cervix and intestine above.

Surgical removal of stump carcinoma is of little avail. Behney recommends splitting the cervix transversely by cautery to a depth of one-half its length and placing the radium crosswise within the lips of the split cervix (figs. 2, 3). Needling the stump, followed by vaginal colpostat, is of added value (fig. 4). Following radium application, high voltage roentgen irradiation in adequate dosage is indicated.

Recent collected statistics show the prognosis of true stump cancer which has been properly irradiated to be as good or better than carcinoma of the cervix where the fundus is present. This is ascribed to the fact that compression of the lymphatics, limitation of blood supply and scar tissue in the parametrium tend to keep the growth limited to the cervix longer.

CONCLUSIONS

1. Our total incidence of cervical stump cancer is 8.1 per cent with but 4.3 per cent true carcinoma of the remaining cervix.
2. Careful preoperative study of patients requiring hysterectomy for seemingly benign conditions would reveal associated carcinoma if present.
3. Total and subtotal hysterectomies are discussed. Should the expert pelvic surgeon refrain from doing complete hysterectomies where indicated because of a higher mortality rate in the hands of less experienced operators? It is my opinion that their standards should be kept at the highest level in the interest of efficient and effective surgery.
4. Irradiation treatment of cervical stump cancer is the method of choice.
5. The prognosis in true stump carcinoma is much brighter than generally recognized.

NOTE: I wish to express my appreciation to the Cancer Control Division of the Oregon State Board of Health for assistance they have given in making this study.

MANAGEMENT OF ANORECTAL PATHOLOGY IN OBSTETRICS

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The physician practicing obstetrics is often called upon to treat anorectal pathology. In fact, many of the patients I treat personally date their rectal trouble from their first or succeeding pregnancies. This has been the experience of other proctologists all over the world.

The cause of anorectal trouble during pregnancy is generally accredited to change in bowel function, increased pelvic weight causing pressure on lower bowel, increased venous pressure below diaphragm, straining at stool and to some extent a more or less decrease in usual activity of the patient. The above is common knowledge and yet it is surprising to note how little is done either prophylactically or as a corrective measure, once the patient has trouble.

No physician practicing obstetrics would fail to examine his patient most thoroughly for anything that might lead to eclampsia or other serious complications. Neither would he fail to measure the pelvis as a precaution and to forewarn him as to a difficult or impossible labor. These are fundamentals and much stressed in medical colleges. This is, of course, as it should be. Too little attention, however, is paid to the gastrointestinal tract.

Constipation is too often accepted as an uncontrolled fact and is dismissed by ordering a so-called harmless laxative or daily enemas. Strange as it seems, the patient accepts this sort of treatment without a murmur. She, too, believes that bowel trouble must accompany pregnancy. Didn't her mother and grandmother before her so suffer? "Just another curse that the Almighty placed upon the female of the species."

During the past several years I have been devoting considerable study to management of the anorectum in pregnant women. Pregnancy is as normal for a woman as is menstruation or the menopause. Therefore, it is probable that some will have complications but by far the vast majority will not. Again, we have discovered that complaints vary according to whether the pregnancy has been desired or not, also the home, social or economic life of the patient will have a good deal to do with her complaints.

The best way to handle any pathology is to prevent it from occurring. Can anorectal pathology be prevented in the obstetric patient? Probably not altogether, but certainly pain and suffering can be minimized. When a gravid woman presents herself, besides the usual examination a careful history should be taken concerning her bowel function and then a complete examination made of the anorectal region. A digital examination alone is not sufficient and, if that is all that is done, much pathology will be overlooked. A proctoscopic examination is indicated and if possible the sigmoidoscope should also be used. Good light is essential and enough time should be given so that all areas are carefully scrutinized.

If no pathology is found, steps should be taken to prevent its occurrence. Since change from the usual bowel function is anticipated, this should be explained to the patient so that she will not begin unnecessary self-medication. The change in bowel function will vary. If a special diet is indicated for one reason or another, one may expect a change not only in the number of stools but in quantity. I know of no condition that requires more intelligent cooperation from the patient than management of bowel function. This is especially true in the pregnant woman and, if dismissed lightly or carelessly, trouble is bound to ensue.

If constipation is already present, its type and cause should be determined and proper treatment instituted. Likewise for diarrhea. It is beyond the scope of this paper to discuss the treatment of constipation or diarrhea and the reader is advised to consult elsewhere unless already familiar with proper methods of treatment. I do believe that constipation can be managed by diet, hygenic measures, exercises, etc., and that laxatives have no place in its correction. Therefore, granting no anorectal pathology is present at the time of the first examination, all that is necessary to do is to give the patient proper instructions as to bowel habit and to have her report any abnormality of it, also any symptoms referable to the anorectal region. If pathology is found, it should be treated at once. Any untreated anorectal pathology will get worse during labor and the suffering the patient endures is often described as worse than "having the baby."

Many physicians do not treat anorectal pathology during pregnancy by surgery because they are afraid of terminating the pregnancy. During the puerperium they fear infection and delay in convalescence. This is not the case. Experience shows that it actually speeds up convalescence. Certainly it tends toward a smoother and more painless puerperium. There is no reason to expect severe infection, if proper surgical precautions are taken.

Internal hemorrhoids, if present and uncomplicated, may be treated by injections. These should be given by an experienced operator. Many bad results from injection treatments are due to inexperience. Several solutions have been used but generally I have limited myself to a 5 per cent phenol in vegetable oil. The injections have been small, two to three cubic centimeters, and never more than one area injected at a time. If well tolerated, the injections are given once a week. If not, once every two weeks. You may not be able to effect a cure but you can be sure that you will not have a complete prolapse of the internal hemorrhoids at the time of labor. The injections are limited to one area and a small amount of solution is used in pregnant women because of reports of miscarriages thought due to injection treatment. No miscarriages have occurred in patients who were treated in the above manner.

Mixed Hemorrhoids. This is the type which combines internal and external hemorrhoids. They are consistent trouble makers unless treated. If seen in the later months, it is better not to do extensive surgery. Hemorrhoidectomy in this type of lesion is a plastic operation and if properly done is really major surgery. Palliative treatment is best any time after the fifth month, or if there is any other contraindication for operation such as impending eclampsia, hyperemesis gravidarum, etc. The palliative treatment consists of rest in bed, injection of the internal hemorrhoids, removal of thromboses as they occur, application of hot or cold packs to the anal region and sedation as required. Many cases will not submit to radical surgery at any time during pregnancy. Palliative measures should then be used but the patient should be warned as to impending trouble after delivery.

Prolapsed, strangulated, internal hemorrhoids should be removed at once. With palliative treatment several days are required for this condition to subside. During this time the patient must stay in bed. The strangulated mass must be returned to position and kept there if possible. This means that the bowels must be tied up for four or five days while resolution takes place. At best in these cases there will be some sloughing and infection, causing rectal discharge with its accompanying irritation about the anus. This goes on for some time after the pain has subsided and is very annoying to the patient. Much sedation is required and continued warm applications to the anal region. These cases are often so bad that local anesthesia is needed to replace the mass.

Some years ago while using a local ansethesia to replace some especially large and strangulated hemorrhoids, the patient experienced so much relief from the anesthetic that I suggested surgery. She consented and accordingly a hemorrhoidectomy was performed then and there. The results were good. This practice has been followed whenever possible ever since. The pain and suffering of the patient are far less than under palliative measures which at best only give temporary relief and do not avoid the necessity of surgery later.

Skin tags have been found in our experience to be the cause of much local irritation. They should be removed at once in all cases as a prophylactic measure. Local anesthesia is sufficient. A day or two in bed is advisable after removal and with warm applications will keep pain at a minimum.

Thrombosed external hemorrhoids are a common complication in pregnancy and should be removed whenever they occur. This means during pregnancy or any time after labor. The operation is simple and safe at any time. Local anesthesia is used. The covering of the hemorrhoid is grasped with an Allis forceps and an elliptical incision of proper size is made with scissors. This exposes the clot enclosed in the vein, which is now dissected out exactly as one would remove a sebaceous cyst. If one should accidentally cut through the vein so that the clot is released, then the vein covering should be picked up with a forceps and entirely removed. Search should always be made for deeper clots as relief cannot be expected unless all are removed. The wound should be clean and all bleeding must be controlled. Usually pressure is sufficient for this but the occasional tying of a vessel may be necessary. The edges of the wound are now allowed to fall together without suture.

These patients are eternally grateful for relief from pain and suffering that accompanies this lesion. Hot packs applied immediately after the operation and one-quarter grain morphine should be given either just before or immediately following the procedure. Incision with release of the clot is not sufficient in these cases. Very often the wound immediately fills with another clot and the patient is worse off than if nothing had been done. This would not happen if the vein covering was removed.

External hemorrhoids are external and, therefore, cannot be pushed internally and be expected to stay there. This is important to remember. All proctocologists have seen cases that had been made worse by repeated attempts to "replace" the hemorrhoids. External hemorrhoids are covered with skin, internal hemorrhoids by mucosa. Ointments, salves, suppositories, etc. are useless and should have no place in the treatment of external thrombosed hemorrhoids.

Fissures and Irritable Ulcers. As far as the obstetric patient is concerned, these conditions are most often due to trauma from taking enemas and repeated digital rectal examinations before and after labor. Nurses or interns should not be allowed to make digital examinations unless they have been first supervised and one is sure that they are not only gentle but they see what they are doing. Digital examinations should be kept to a minimum during labor. However, the same etiologic factors are present in pregnant women as in anyone else who may contract this condition.

Prophylaxis plays an important part here, and such conditions as spastic sphincter, pectenosis, infected anal crypts, etc. should be attended to long before labor sets in, so as to avoid this complication. The obstetric patient with an anal ulcer is the victim of carelessness or neglect. It can absolutely be prevented. This does not apply to a pregnant woman who already has an ulcer at the time of her first examination.

All ulcers, provided proper prophylactic measures have been taken, start from a superficial abrasion of the anal canal. These abrasions occur most frequently in the posterior commissure. Occasionally the anterior commissure is the site of a tear or ulcer and in the obstetric case in particular it is apt to occur there. Ulcers occur but rarely on the lateral aspects of the anal canal. The anus should be inspected in the above order. These tears can be easily seen, if proper separation of the anal canal is made. Examination is greatly facilitated by having a nurse assist. The abrasion should be promptly treated with a soothing lotion. One application of equal parts of balsam of Peru and castor oil will usually effect a cure.

In giving an enema to a patient following labor two nurses should be present. The patient is asked to lie on her left side. The enema tip is well lubricated with a water soluble jelly and one nurse holds the right buttock up and the left down, allowing good exposure for insertion of the tip without danger of injury. Blind insertion of an enema tip is dangerous and not to be tolerated. If impossible to have two nurses, the patient can assist by holding up the cheek of the right buttock. After evacuation, the nurse must see that the area is thoroughly cleansed and dried. If any bleeding occurs, the balsam of Peru mixture should be applied at once and the attending physician's attention directed to the matter. Do not hold the mistaken idea that a soft catheter will not cause trouble. It will. Play safe, have the nurse see what she is doing, regardless of the type of enema tip used. Routine use of enema and laxatives during the puerperium is bad practice and should be discouraged. A patient who normally has bowel movements without help will resume her natural habit if left alone.

If, however, an ulcer does occur, or an ulcer is present at the first examination, the pain is bound to be severe, and measures must be adopted for relief. Here, again, salves, etc. are useless. Narcotics are required for any relief at all. Immediate surgery is the best treatment. This may be done under either local or general anesthesia and the entire ulcer and accompanying pathology removed by making a triangular wound with the base distally. The so-called pecten band and subcutaneous portion of the external sphincter are severed, if necessary to increase the size of the anal outlet and release the spasm.

In my opinion this is a very valuable procedure and should be done routinely in all cases. A small gauze strip saturated with glycerin is placed in the wound. This is to be removed in twenty-four hours. A single 00 chromic catgut suture is placed in the apex of the wound to prevent upward retraction of the mucous membrane. If this happens, healing will be delayed. This type of wound insures good drainage and allows healing to take place properly. The wound should be dressed several times daily. It is poor technic to use the vaginal pad as a dressing for the rectal lesion.

This wound heals by granulation and it is necessary to control excessive granulation. This is accompanied by application of silver nitrate 15 per cent. Bridging over is especially bad as it will always leave an infected pocket that will cause no end of annoyance until it is excised. It can be prevented by seeing that the wound edges are kept open so that healing takes place from the bottom. Hot packs are applied after surgery.

The above treatment gives relief at once but should be used only in hospitalized patients. At home, or if the above is impossible, one may inject under the ulcer and into the sphincter any one of the oil soluble anesthetics. This will give relief until proper management may be had. The technic of this injection is as follows: Morphine grains one-quarter is given by hypo; the entire anorectal region is surgically prepared. Two per cent novocaine is injected under the base of the ulcer. This relieves the actual pain of the ulcer. The gloved, well lubricated index finger is now inserted into the rectum. This serves as a guide as to direction and depth and also prevents puncture of the rectal wall. The anesthetic solution is now injected into all layers of the external sphincter in a fan shaped manner. The puborectalis portion of the levator is also injected if the ulcer is posterior. The solution should be warmed so that it will flow easily. A twenty gauge needle is used. The needle is inserted about one-quarter inch from the ulcer and the injection is made as the needle is advanced. One must be careful not to inject any of the solution into the skin as this will cause pain and sloughing. This injection should be made very slowly and constant massage is made with the finger in the rectum. This serves to distribute the solution evenly. Usually one insertion of the needle is sufficient for the entire injection.

If all the muscle layers are injected, one may reasonably expect relief to last from four days to a week or more. If the ulcer is not of too long standing, this treatment will result in permanent relief. However, drainage must be adequate and dressings should be directed towards stimulation of normal granulation. This treatment is not to be recommended unless one is well qualified to do it. The technic is not difficult to master but it is by no means simple. One must have an accurate knowledge of the anorectal musculature or the results will be disappointing. If one expects a cure when using this method of treatment, he should also do the surgery as described, otherwise this procedure must be considered palliative.

Treatment of ischiorectal abscesses is adequate incision and drainage. If seen early in pregnancy, an attempt should be made to discover and remove the infected crypt which caused it. If this is not possible, it is best to drain the abscess and it will heal down to a simple fistula. This fistula should be kept open to prevent formation of another abscess. It should be operated on within three weeks after the baby is born as these lesions are a source of local infection and retard convalescence. Anorectal abscess is one of the rare complications of pregnancy. Anal abscess occurs occasionally during puerperium. It is usually small, and simple incision results in rapid healing.

The question of anesthesia in these cases is largely individual. Local infiltration, using 2 per cent novocaine, is satisfactory. However, spinal, sacral, intravenous and general anesthesia have been used where no contraindications are present. If a reliable anesthesist is available, one has little to worry about as far as anesthesia is concerned. Morphine grain one-quarter, phenobarbital grains 3, one-half hour before operation has proven useful not only as preliminary sedation but it also controls severe pain immediately following surgery.

One should not hesitate to repeat the morphine as often as may be necessary on the day of the operation. This practice, together with hot applications to the anal region, will keep these patients from acute suffering. On the second day and thereafter hot packs alone or an occasional capsule, containing 5 grains acetylsalicylic acid and phenobarbital grain one-half, will be all that will be required for pain. If the bowels do not move by the fourth day, morphine grain one-quarter is injected by hypo. One-half hour later a saline enema is given. After the movement the area should be carefully cleansed and hot packs applied. There will be little distress experienced with the first evacuation, if this practice is followed. It will also eliminate the dread of future bowel movements.

CONCLUSIONS

Treatment of anorectal pathology in obstertics has been neglected. An attempt has been made in this article to facilitate and maintain the comfort of the gravid woman. The more common anorectal pathologic conditions have been discussed.

During labor any rectal protrusions or prolapses should be replaced. Anal thrombosis should be excised. Special care should be taken in repairing perineal tears. If the bowel is injured the opening should be closed with interrupted seromuscular mattress sutures, using fine silk. This will prevent the formation of a rectovaginal fistula.

Anorectal infection will not follow treatment of pathology nearly as often as it will follow untreated pathology. Proper management of anorectal pathology in obstetrics adds greatly to the comfort of which these patients are so deserving.

GALLSTONE OBSTRUCTING DUODENUM

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This case is offered for record because of the relatively few reported cases of complete obstruction of the duodenum due to gallstone. Wakefield et al,[1] reviewing the experience of the Mayo Clinic, record only ten cases of obstruction of the intestinal tract. The unusually large size of this stone[2] and history of previous attacks of obstruction give cause for speculation as to how long it may have been present in the duodenum.

CASE REPORT

I. O., a man, aged 78, unmarried, retired millwright, was admitted to St. Joseph's Hospital June 14, 1940, complaining of persistent vomiting. He had been seen at home six hours previously but had not responded to the treatment which had formerly relieved him of these symptoms. (The last previous attack was aborted in March, 1940.) His only complaint was vomiting. He was not nauseated and maintained he had no pain.

He attributed his illness to "poison meat," having eaten a hamburger sandwich the night before the onset of his illness. He had no other complaints about his stomach or gastrointestinal tract and regarded his stomach as being "good," except for his infrequent attacks of "poisoning" (four or five such attacks in the past year). His history by systems was negative except for occasional nocturnal dyspnea and breathlessness upon exertion, noted more in the past six months.

Physical examination revealed a man who appeared younger than his 78 years. His face was thin. The tongue was coated but not dry. Teeth were replaced by dentures. The pharynx was clear. Slight arcus senilis was present. Pupils responded to light and accommodation. The thyroid was not palpably enlarged. No nodules were felt in the neck. The chest was thick and barrel-like. Lung fields were clear throughout to auscultation and percussion. The heart was not apparently enlarged. Its tones were distant and an occasional extrasystole was noted. There was a ringing tone in the aortic area. Blood pressure was 130/60. Abdomen was soft. No masses were palpated and no tenderness was noted. Extremities were thin. Radial pulse was forceful. Routine blood and urinalysis varied from normal only in that they indicated some dehydration. The Kahn test was negative. No blood chemistry was ordered.

Progress. He was given 1000 cc. of 5 per cent glucose and the stomach was washed, following which he was able to sleep all night. Next day, June 15, vomiting again occurred and in the evening dark coffee ground vomitus was noted. Continuous Wangensteen[3] suction was started and an effort was made to replace the fluids and chlorides intravenously. The probability of an obstructing carcinoma of the stomach was considered likely and roentgenogram of the stomach was made. The roentgenologist reported complete obstruction of the outlet of the stomach. No barium was seen passing through the pylorus. No filling defect was noted.

He was prepared for surgery and operated on June 18. The first portion and arch of the duodenum were completely covered by a thick mass of scar tissue, attaching it to the under surface of the liver in the gallbladder area. This mass was dense and firm and was regarded as being due to an old stenosing ulcer of the duodenum which completely obstructed the lumen of the bowel. Due to the patient's age and unfavorable condition for extensive surgery, a simple posterior gastroenterostomy was done and he was returned to his room in good condition.

He was apparently making an uneventful recovery until the evening of June 22, when an apparently mild postoperative parotitis was noted. He was showing no toxic symptoms. However, it was thought best to give him 300 roentgens of deep therapy.[4] Next morning, the fifth postoperative day, his condition was regarded as good. He had been retaining clear fluids by mouth for thirty-six hours. At 1:15 p.m. he developed a sudden acute auricular fibrillation and expired.

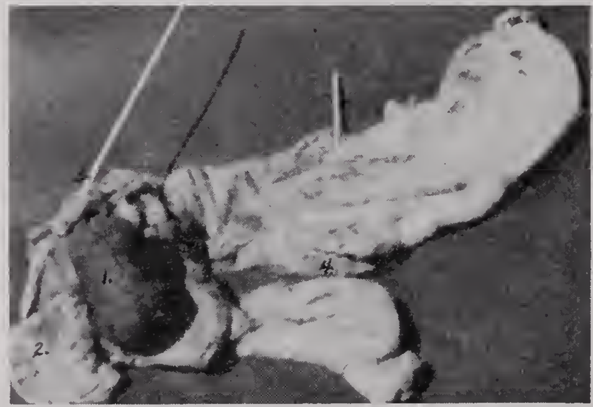

Fig. 1. Necropsy specimen of stomach, duodenum, remains of gallbladder, cystic duct and first portion of jejunum. (1) Large gallstone lying in lumen of duodenum. (2) Flap of duodenum pulled back to expose stone. (3) Probe lying in cystic duct. (4) Probe inserted through stomach at point of gastroenterostomy.

At necropsy the recent gastroenterostomy was found to be tight and functioning. The second portion of the duodenum contained a huge gallstone measuring 6x4.5 cm. which completely obstructed the lumen of the bowel (fig. 1). The fundus of the gallbladder was entirely replaced by dense scar tissue which was firmly adherent to the arch of the duodenum. This mass was carefully opened and the cystic duct with its spiral valves was exposed. No opening or fistulous tract could be found connecting the duodenum with the remains of the gallbladder or cystic duct. The common duct, which was patent, entered the duodenum through a normal sized ampulla just above the impacted stone. No other stones were found in either the biliary system or gastrointestinal tract. The heart muscle was found to be soft and flabby. The aortic valve was competent. The coronary vessels were markedly calcified and narrowed but no obstruction of them was found. Cause of death was recorded as chronic myocarditis with acute heart failure.

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[1] Wakefield, E. G., Victers, P. M. and Walters, W.: Intestinal Obstruction Caused by Gallstones. Surgery 5: 670-673, May, 1939.

[2] Turner, G. G.: Giant Gallstone Impacted in Colon and Causing Acute Obstruction. Brit. J. Surg., 20:26-33, July, 1932.

[3] Wangensteen, O. H.: Therapeutic Problem of Bowel Obstruction. Chas. C. Thomas, Springfield, Ill., 1937.

[4] Mason, R. L.: Pre- and Postoperative Treatment. W. B. Saunders & Co., Philadelphia, Pa., 1937.

SUMMARY

A case is presented of complete obstruction of duodenum due to an impacted gallstone.

Replacement of the fundus of the gallbladder by dense scar tissue indicates that the probable mode of entry of the stone into the duodenum was by pressure necrosis.[5]

Absence of an internal biliary fistula suggests the probability that the stone lay in the duodenum for some extended period of time and previous intermittent attacks of partial obstruction may have well been due to spasm of the bowel about the stone as reported by Treves[6] forty years ago.

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[5] Walters, W. and Snell, A. M.: Disease of Gallbladder and Bile Ducts. W. B. Saunders & Co., Philadelphia, Pa., 1940.

[6] Treves, F.: Intestinal Obstruction, Its Varieties with Their Pathology, Diagnosis and Treatment. W. M. Wood & Co., Baltimore, Md., 1899.

POSTGRADUATE LECTURES

During the year postgraduate courses of lectures are scheduled for the profession in our three states. In order that these courses may become well known, and be presented to the readers of this journal from month to month, they will be hereafter listed under the above heading with certain details pertaining to each as they may be received for publication. In this issue appear data which have been received descriptive of each course of the lectures. In the future issues it is expected that these will be supplemented as more information is received concerning each of them.

OREGON

PORTLAND ACADEMY OF MEDICINE

May 12 - 14

Portland Academy of Medicine will hold a meeting in University of Oregon Medical School Auditorium May 12-14. Guest speaker will be Virgil H. Moon, Professor of Pathology, Jefferson Medical College, Philadelphia.

SUBJECTS

May 12, Circulatory Failure of Capillary Origin.

May 13, Shock: Conditions of Occurrence and Sequelae.

May 14, Shock: Prevention, Early Recognition and Treatment.

Courses For Which Information Will Be Published Later

Sept. 2-3 — Portland Academy of Medicine.

Sept. 3-6 — Oregon State Medical Society Postgraduate Session.

WASHINGTON

Pacific Northwest Medical Association

Spokane, June 25-28.

This postgraduate course consists of lectures on bronchoscopy, pathology, neurology, internal medicine, surgery, physiology, endocrinology, roentgenology and obstetrics.

Speakers are Russell L. Cecil of Cornell University Medical School; William J. Kerr of University of California; Perrin H. Long of Johns Hopkins; William Dock of Stanford University; Samuel Soskin of Michael Reese Hospital, Chicago; John deJ. Pemberton of Rochester, Minn.; Carleton Mathewson, Jr. of Stanford University; Louis H. Clerf of Jefferson Medical College; Louis J. Karnosh of Cleveland and L. C. Conn of the University of Alberta. Announcement appears on page 5.

University of Washington Annual Graduate Medical Course

Seattle, July 14-18.

Guggenheim Hall, University of Washington, July 14-18. Lecturers for this course will be as follows:

Maurice G. Pincoffs, University of Maryland. Subject: Medicine.

Max Thorek, American Hospital of Chicago. Subject: Surgery.

John Saunders, University of California. Subject: Surgical Anatomy.

Howard C. Naffziger, University of California. Subject: Neurosurgery.

List of subjects appears on page 3.

IDAHO

State Medical Association Annual Lectures

Sun Valley, June 18-21.

The annual meeting of the State Medical Association provides a postgraduate course of lectures. The program for the Sun Valley meeting in June will present speakers from Stanford University School of Medicine, who will be as follows: William Dock, pathologist; David Rytand, internist; Nelson Howard, surgeon; Carleton Mathewson, surgeon; Morris R. Tainter, pharmacologist. Full program appears on page 189.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-SEVENTH ANNUAL MEETING, PORTLAND, SEPT. 3-6.

LEGISLATIVE REPORT OF COMMITTEE ON PUBLIC POLICY

Important Legislation Passed

House Bill No. 103—requires physician to take blood test for syphilis on all pregnant women.

House Bill No. 145—requires teachers to furnish certificate showing freedom from communicable tuberculosis.

House Bill No. 332—an enabling act to permit the Secretary of State to deduct a portion of salaries of state employees for medical care.

House Bill No. 463—places administration of Crippled Children's Program in the U. of O. Medical School instead of the Welfare Commission.

Senate Bills Nos. 110 *and* 111—provide more humane procedure for handling mentally diseased.

Senate Bill No. 208—largely confines reporting of venereal disease to physicians.

Senate Bill No. 236—substitutes a more thorough and adequate supervision of contracts for medical, hospital, and related services for non-industrial accidents and injuries.

Senate Bills Nos. 298 *and* 299—establish a more uniform and more workable system for medical care of workmen injured on the job. The State Industrial Accident Commission will establish more uniform contracts and rates which must be followed by employers who reject the Workman's Compensation Act.

Less Important Legislation Passed

Senate Bill No. 51—permits the Board of Medical Examiners to give examinations on such dates as the Board may from time to time deem advisable.

Senate Bill No. 35—deals with certain amendments to the optometry law.

Senate Bill No. 117—extends the period of training required of chiropractors.

Senate Bill No. 242—makes the State Board of Health the agency to receive Federal funds for promotion of health and requires the Board to set up a merit system for its employees.

House Bill No. 92—provides for education of crippled children and provides for certificate by a physician.

Some Bills Which Did Not Pass

House Bill No. 105—free examination and treatment materials for everyone with venereal disease.

House Bill No. 113 *and several other bills*—would have added certain accidents which are not now covered by the State Industrial Accident Commission.

House Bill No. 150—would have given the osteopathic practitioners their own Board of Examiners and an unlimited license.

House Bill No. 203—would have provided for an extensive health insurance law.

House Bill No. 313 *and several others*—would have provided for occupational disease coverage in industries.

House Bill No. 344—would have set up an extensive department of mental health.

House Bill No. 248—would have required county courts to admit all types of practitioners to county hospitals regardless of training or professed schools of healing.

ESTABLISHED POLICIES OF OREGON STATE MEDICAL SOCIETY

Prepayment plans of medical care are endorsed with certain definite limitations. Medical care for certain groups can be approved if this care is provided by physician owned and controlled service bureaus. All physicians practicing ethical medicine must be eligible to perform service under any plan of group medical care. Hospital service plans offering hospitalization only can be approved, if profits are not derived from physician's services.

Voluntary indemnity insurance can be approved, if operated by a true insurance company whose medical function is limited to reimbursing the insured. Other special plans for providing medical care should first be approved by the Council of Oregon State Medical Society. Opportunity for the agency operating such plans to practice medicine without a license must not exist or be inherent in the plan.

The physician must be responsible solely to his patient at all times. An organization or corporation must not make a profit from the physician's services.

Oregon State Medical Society has no fee schedule.

TENTATIVE PLANS FOR ANNUAL MEETING

The Program Committee of Oregon State Medical Society has started planning for the Annual Session in Portland next September and is making a radical departure from the customary type of program. There will be no papers given by members of the Society. To take the place of these, there will be: (1) morning clinics in five hospitals; (2) panel discussions in the afternoons arranged so that it will be possible to hear five different discussions during the session; (3) registration will be necessary for attendance at the clinics and panel discussions. Guest speakers will lecture as usual and one evening will be a joint meeting with the Portland Academy of Medicine.

The following speakers have accepted invitations to address the society on subjects indicated.

Frank H. Lahey
Boston, Mass.
President-Elect, American Medical Association
Subjects to be announced later.

George M. Curtis
Columbus, Ohio
Professor of Surgery, Ohio State University College of Medicine

1. "Iodine and Calcium Metabolism in Thyroid Disease."
2. "Recent Advances in Thoracic Surgery."
3. "Recognition and Management of Acute Injury to the Chest."

Henry J. Tumen
Philadelphia, Pa.
Assistant Professor of Medicine, Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania

1. "Diagnosis and Treatment of Jaundice."
2. "Management of the Patient with Irritable Colon."
3. "Clinical and Gastroscopic Features of Chronic Gastritis."

Milton B. Cohen
Cleveland, Ohio

1. "Nature of Allergy, Its Pathology, and Mechanism of Its Production."
2. "Management of Patients with Asthma, Hay Fever and Other Allergic States."
3. "Growth Disturbances Produced in Allergy."

OREGON STATE BOARD OF MEDICAL EXAMINERS

The Oregon State Board of Medical Examiners met April 3rd and 4th, at which time Frank E. Fowler of Astoria was elected president, succeeding Irvin R. Fox of Eugene, and L. S. Besson of Portland, who had been acting as secretary-treasurer, was elected to that office. In this election the board pursued its policy of rotation of the office of president.

Licenses based upon reciprocity or endorsement of National Board certificates were issued to James A. Baker of Hoquiam, Washington; Bertha Brainard, formerly of Jamestown, North Dakota; Sidney James Hoffman of New Salem, North Dakota; George Porter Lyman, formerly of San Francisco and now associated with Harry M. Hendershott, and I. John Scovis, formerly of Philadelphia, who has taken over the practice of DeWalt Payne of The Dalles.

Revocation hearings were had, resulting in continuance of two cases during probationary periods and continuance of two additional cases which were not yet at issue.

The medical practice act having been amended at the recent legislature so that the dates of examination are discretionary with the board, Dr. Fox was empowered to discuss the matter with Mr. Charles D. Byrne, secretary of the Oregon State Board of Higher Education, looking to setting the summer examination dates on July 17, 18 and 19, the object being to accommodate applicants taking the July 12th basic science examination. These dates have not yet been confirmed.

Subjects for the July examination, which will be held at the University of Oregon Medical School Library, were assigned as follows: Frank E. Fowler, Surgery, Irvin R. Fox, Practice of Medicine and Physiology and Histology, L. S. Besson, Pathology and Bacteriology, Carl G. Patterson, Materia Medica and Pediatrics, Charles C. Newcastle, Diagnosis and Obstetrics and Gynecology, J. L. Engle, Hygiene and Practice of Osteopathy, H. L. Blosser, Anatomy and Chemistry and Toxicology.

STATE BOARD OF HEALTH

Visitors Welcomed

Oregon State Board of Health welcomed a number of visitors to its offices during the month. Among these "out-of-staters" were Miss Rosalie Peterson, Associate Public Health Nursing Consultant of the United States Indian Service and Miss Alice Brackett, Public Health Nursing Consultant of the U. S. Children's Bureau. Miss Brackett, accompanied by members of staff of Division of Public Health Nursing, is visiting a number of the county health units.

Dinner Honors Nutritionist

On April 18th the Division of Maternal and Child Health gave a dinner honoring Miss Marjorie Heseltine, Consultant in Nutrition for the U. S. Children's Bureau. The dinner was attended by physicians and nurses from all parts of the state.

Director Leaves for Army

William Levin, Director of the State Hygienic Laboratory for the past 18 years has been called to active service with the United States Army. He will report for duty at Camp Roberts, California. Doctor Levin holds the rank of Major in the Sanitary Corps.

New Equipment Installed

The Division of Vital Statistics of the State Board of Health has installed a photostatic machine for the purpose of producing exact duplications of all birth and death certificates on file with the Division upon request and upon the payment of the statutory fee of fifty cents. This new equipment will insure absolute accuracy of all certified copies.

Spotted Fever Vaccine

The Oregon State Board of Health has available for distribution to the physicians of Portland, Rocky Mountain Spotted Fever vaccine,. Physicians outside of the city of Portland are to write direct to Dr. R. R. Parker, Rocky Mountain Spotted Fever Laboratory, Hamilton, Montana.

WOMAN'S AUXILIARY

Multnomah County Auxiliary

At 2 p. m., April 28th, the Auxiliary held its regular monthly meeting in the auditorium of the Medical-Dental Building. Guest speakers were Mr. William Galesdorf of Salem, and C. H. Manlove of Portland. Their subject was, "Hospital Service, an Insurance Program."

Members of the League of Women Voters were guests of the Auxiliary at their meeting, March 24, in the Medical-Dental Building. The program began at three o'clock when Mr. S. Joy Smith, of the Oregon Wild Life Federation, showed an educational film, "The Polluted Willamette."

Mr. Smith's talk, while running the picture, was about the condition of the river and necessity for cleanup of the stream.

Preceding this talk, Mrs. Frances Hasford Conklin, State Commander of the Woman's Field Army of the American Society for the Control of Cancer, talked briefly regarding their work asking again for volunteers from the Auxiliary to assist in the drive.

Two other speakers on the program were: Helen A. Cary, Director of the Division of School Hygiene, City of Portland, who gave highlights of work in this field. Dr. Cary appealed to Auxiliary members to assist in this educational work by being well informed, and thus able to urge uninformed parents to cooperate with their bureau.

Mrs. A. E. Rockey, a veteran member of the Auxiliary and an active worker for the Roadside Council, spoke briefly of their aims toward beautifying the scenery along the highways, of their present program, and asked for a committee from the Auxiliary to volunteer for their present campaign.

Tea was served to members and guests with four representatives of the League of Women Voters pouring.

Mrs. R. L. McArthur, Chairman of the Membership Committee announced that fourteen new members had joined the Auxiliary this month.

Benton County Auxiliary, Corvallis, Oregon

The Auxiliary meets the first Friday in each month for a dessert luncheon, which is followed by a business meeting. For the program one of the members talks on some new subject in medicine. Discussion follows. The main project of Benton County is to see that *Hygeia* is placed in all schools in the county.

One meeting during the year is held in the evening and husbands are invited. Their next meeting will be mostly a social occasion.

MEDICAL NOTES

N. W. Jones' Lectureship for 1941: Guest speaker this year was Bradley Patten, Professor of the Department of Anatomy, University of Michigan Medical School. Two lectures were given at the University of Oregon Medical School Auditorium, April 3 and 4. The first lecture was accompanied with a photomicro motion film and was entitled, "The First Heart Beats in Living Embryos as Recorded by Micromoving Pictures and Analyzed Electrocardiographically." The second lecture was entitled, "The Foramen Ovale: Its Development, Its Role in Postnatal Circulatory Changes and Its Congenital Defects."

Emmanuel Hospital, Portland, has announced plans for the construction of an additional wing. Thirty-five beds will be added to the general hospital and twenty beds will be added to the maternity hospital.

Wilson D. McNary, superintendent of Eastern Oregon State Hospital, Pendleton, since 1913, has announced his resignation and will move to Portland in October. Donald Wair, former assistant superintendent of the Hospital, has been appointed acting superintendent.

H. E. Lamb, formerly of Twin Falls, Idaho, has entered private practice in Eugene.

John R. Seeley, Coos County health officer, has resigned his position to enter private practice in association with Dean Crowell, Marshfield.

I. J. Scovis, recently of Philadelphia, has taken over the practice of DeWalt Payne, The Dalles.

OBITUARIES

Dr. Glenn E. Prime, Salem, died of heart disease, April 20, at the age of 53. He was born at Beaver, Nebraska. He attended the University of Nebraska and the University of Oregon Medical School. He had resided at Salem for the last 30 years, and had been retired from active practice for several years.

Dr. S. A. Davis Bean, of Salem, died March 10, 1941, at the age of 74, of carcinoma of the urinary bladder with metastases.

SOCIETY MEETINGS

JACKSON COUNTY MEDICAL SOCIETY

Jackson County Medical Society held a dinner meeting April 9, at the Ashland Hotel, Ashland. The paper of the evening was given by Edwin R. Durno.

LANE COUNTY MEDICAL SOCIETY

Regular meeting of Lane County Medical Society was held in Eugene, at the Eugene Hospital, April 18. Following a dinner, Theodore Lundy spoke on, "Chemistry and Action of Certain Vitamins," and James Stewart spoke on "A Method of Evaluation of Backache."

MULTNOMAH COUNTY MEDICAL SOCIETY

Both regular April meetings were postponed. A special meeting was held April 11 to hear John H. Stokes, Professor of Dermatology and Syphilology at the University of Pennsylvania, Philadelphia, who spoke on "Control of Venereal Disease."

Dr. Stokes has been making an investigation of venereal disease control throughout this area, as a member of the subcommittee on venereal disease of the medical division of the National Research Council.

POLK-YAMHILL-MARION MEDICAL SOCIETY

April meeting of the Polk-Yamhill-Marion Medical Society was held April 8 in Salem. L. Lucas, Portland orthopedist, discussed "Injuries and Ailments of the Spine."

UMATILLA COUNTY MEDICAL SOCIETY

April meeting of the Umatilla County Medical Society was held in Pendleton. Guest speakers present were: Donald V. Trueblood, Seattle, who discussed, "Lesions of the Lips and Oral Cavity;" and Paul G. Flothow, Seattle, who discussed, "Herniation of Intervertebral Discs." Twenty-eight doctors and dentists were present.

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-SECOND ANNUAL MEETING, SEATTLE, AUG. 24-26

SPECIAL BULLETIN

TO: All County Medical Societies from the Washington State Medical Association:

The Department of Licenses, State of Washington, will notify all physicians in this state within a few weeks that Chapter 166 of the Session laws of 1941, formerly known as House Bill No. 370, will become effective July 1, 1941.

This new law calls for a $5 annual registration fee for all doctors of medicine in the state, and eliminates registration by doctors with the county clerks. Registration will be directly with the Department of Licenses. Registration forms to be filled out will be furnished by the Department, and will consist of a simple notice of the provisions of the law, with a place at the bottom for the signature, address and license number of the doctor paying the fee.

The $5 annual registration fee must be paid on or before July 1, 1941, and any failure, neglect or refusal to do so renders a license to practice medicine invalid, and shall only be reinstated upon written application to the Director and a payment of a $10 penalty, together with the delinquent renewal fee. In other words, failure to pay the $5 renewal fee on or before July 1st would automatically require a fee of $15.

ROLL OF HONOR

Under this heading are listed names of physicians of the state who have been called to active duty in army and navy service. Additional names will be recorded in subsequent issues as they shall be reported for that purpose.

Kyle, Philip C., Major, Tacoma
  Fort Lewis, Wash.
Whitaker, Clifford W., Major, Tacoma
  Fort Lewis, Wash.
Jones, Scott S., Lieut.-Col., Tacoma
  Fort Worden, Wash.
Goering, William H., Captain, Tacoma
  Barnes Hospital, Vancouver, Wash.
Halvorsen, Clifford, Captain, Fort Steilacoom
  Fort Worden, Wash.
Harmon, M. S. Captain, Montesano
  Fort Worden, Wash.
Loree, David R., Captain, Vancouver
  Station Hospital, Fort Lawton, Wash.
Flynn, John R., Lieut.-J.G., Tacoma
  Naval Air Station, Pensacola, Fla.
Fletcher, Richard H., Lieut., Seattle
  13th Naval District Staff Headquarters,
  Exchange Bldg., Seattle
Tennant, Raymond E., Lieut., Seattle
  Station Hospital, Fort Lewis, Wash.
Clark, Ralph E., 1st Lieut., Spokane
  Station Hospital, Fort Lewis, Wash.

MEDICAL NOTES

Railroad Surgeon Retires. A. T. Bouffleur, chief surgeon of the Milwaukee Railroad, has retired after 51 years of service. His position will be taken by H. Eugene Allen of Seattle.

Barnes Hospital Opened. Medical corps of the army officially took over newly completed Barnes Hospital at Vancouver, April 3rd. Fifty members of the regular medical corps were first to arrive. An additional 350 soldiers to be assigned later will be new recruits.

Hospital at Lewis. A 400-bed hospital is to be built at Fort Lewis and bids have been received. The plans call for a large central heating plant, clinics, wards, administration building, nurses' and officers' quarters; all of temporary frame construction.

Cowlitz Plans Hit Snag. Bids received by Cowlitz county for the new hospital at Longview were higher than anticipated. An additional $12,000 is needed for construction of the building, and this sum may be asked from the state.

Construction Planned at Tacoma. Bids were opened at Washington, D. C. on May 28th for construction of approximately $1,750,000 worth of new buildings and facilities at Cushman Indian Hospital in Tacoma. This decision comes after ten years of negotiations and planning.

Two Counties Build Sanitarium. Lewis and Pacific counties have agreed to join in building a sanitarium on a site about four miles south of Chehalis. Total cost of the project will be about $75,000. The name selected for the new institution is "Sunnyview."

Pierce Hospital Gets Pool. Contracts have been let for construction of a physical therapy pool at Pierce County Hospital in Tacoma.

County-City Health Program Urged. Whatcom County Medical Society recently adopted a resolution favoring formation of a joint county-city health department for Whatcom county and the city of Bellingham.

State Hospital Gets Improvements. Northern State Hospital at Sedro Woolley has been allotted $400,000 for major improvements and new buildings.

Health Department for Kitsap and Bremerton. City commissioners of Bremerton have approved joint operation with county, state and federal health authorities to establish an enlarged health unit. Proposed $16,720 budget would be contributed to by all four units of government and would provide a health official, two public health nurses, one V. D. public nurse, sanitarian and clerk.

McKay Hospital News. Kenneth Ward of Ephrata has been named head of the McKay Memorial Hospital at Soap Lake to succeed T. G. Fatheree. The hospital has been granted $35,000 for addition to present buildings and officers' quarters.

Health Officers Appointed. H. Garner Wright has been appointed health officer of Whatcom county to succeed R. W. Kite who recently resigned. Kenneth C. Ward has been appointed health officer for Grant county to succeed T. H. Biggs.

Wedding. Robert J. Kearns of Spokane and Betty Merriam of Wallace, Idaho, were married April 14th.

Building Started at Omak. Work on remodeling and construction of the new addition to the Omak hospital was started early in April. Upon completion the improved structure will be known as the J. C. Biles Memorial Hospital.

Crime Laroratory. Tacoma General Hospital has announced establishment of a crime-detection laboratory. It will be under the direction of Charles P. Larson, pathologist and director of laboratories at the hospital. Services of the new laboratory will be available to all law enforcement agencies in the state of Washington. Much new equipment has been obtained and all modern crime detection procedures including ballistic, pathologic and toxicologic studies will be carried out.

Locations. C. Grant Bain has taken over the practice of the late Harry Feagles of Chehalis. W. W. Vandivert has moved from Seattle to Bothell, where he will take over the practice of L. R. Friend, now in the navy. George Falkner is associated with Merle B. Snyder at Chewelah. Carl V. Rasmussen has located in Oroville for practice.

Stanley Holton, formerly of Sedro Woolley, has taken over the practice of Walter Ebling of Mount Vernon. Dr. Ebling has entered the navy medical department, and is stationed at Pearl Harbor, Hawaii. R. R. Kerkow, formerly of Oroville, has moved to Waterville where he will take over the practice of B. J. Ellis.

OBITUARIES

Dr. Mary H. Fletcher Perkins of Tacoma, Wash., died April 7th, aged 83 years. She was the widow of Luther M. Perkins, a Tacoma physician who died in 1911. She was born in Kentucky and received her medical education at the University of Michigan Medical School, graduating in 1891. She practiced for a time in St. Louis, where she was married to Luther Perkins and in 1902 they moved to Tacoma, where they practiced together. She retired from active practice a number of years ago and was a member of the staff of the Western State Hospital for nineteen years.

Dr. George William Overmeyer of Retsil, Wash., died March 27th, aged 78 years. He was born near Winamac, Indiana, and graduated from the Curtis Physio-Medical Institute at Marion, Indiana in 1888. He was a veteran of the Spanish-American war.

Dr. Walter McDonald Davidson of Port Angeles, Wash., died March 24th, aged 48 years. He was born July 12, 1892, in Newton, Ontario, and received his medical education at McGill University Faculty of Medicine, Montreal, Quebec, graduating in 1923. His medical education was interrupted by service with Canadian forces in the first world war. He received a number of decorations in the military service. In 1924 he joined J. C. Hay at Port Angeles for practice.

Dr. William Dalton Walker of Seattle, Wash., died March 19th, aged 64 years. He was born in Jacksonville, Illinois, and received his medical education at St. Louis University School of Medicine, graduating in 1903. He had practiced in Seattle since 1907. Dr. Walker was a descendant of John Dalton, the famous chemist.

Dr. Manford Repp Waltz, of Seattle, died April 20, aged fifty. He received his medical education in Northwestern University Medical School, Chicago, graduating in 1918. He specialized in ear, nose and throat, and had been a Seattle resident since 1921. He suffered with rheumatic heart disease for many years.

Dr. George W. Swaim of Seattle, Wash., died April 11th, aged 83 years. He received his medical degree from the Missouri Medical College at St. Louis in 1885.

OBSTETRICAL ASSOCIATION

Washington State Obstetrical Association met in the Olympic Hotel for its regular spring meeting, April 15, the president, Robert N. Hamblem, of Spokane presiding.

During the morning session several members presented papers on various phases of especial obstetric concern, and Ludwig Emge, Clinical Professor of Obstetrics and Gynecology, Stanford University, guest speaker, discussed these subjects in a thought provoking summary.

"Basic Principles of Estrogenic Therapy" were most ably correlated by Dr. Emge following the lunch hour. He warned the association of the possibility of one's possessing a rabbit's foot philosophy when administering poorly understood estrogenic substances. He urged that less costly products be used when a choice arises and he reminded the obstetricians that thyroid is inexpensive as well as potent.

A film, "Contraception," shown by Ortho Products Company, completed the afternoon meeting.

After the banquet in the evening Dr. Emge gave an excellent discourse on "Placental Accidents and their Treatments." Following this a business meeting was held. Officers elected for the next year were: President R. S. Mitchell, Wenatchee; Vice-Pres. John Fiorino, Everett; Secty.-Treas. H. H. Skinner, Yakima.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

Cowlitz County Medical Society held its regular monthly meeting April 15, at Monticello Hotel, Longview. George Capaccio of the medical service of Virginia Mason Clinic in Seattle gave a very interesing talk on treatment of pneumonia, particularly stressing combined use of pneumonia serum and sulfathiazol. Hale Haven, neurosurgeon, also from Virginia Mason Clinic talked on surgical treatment of angina pectoris by severing the posterior nerve roots of the dorsal thoracic nerves. Several case histories were presented. Both talks were thoroughly discussed by members of the society.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of the Pierce County Medical Society was held in the Medical Arts Building, Tacoma, on April 22, 1941. The meeting was called to order by H. J. Whitacre, the president.

The program was opened by a paper on "The Oral and Parenteral Use of Synthetic Vitamin K," by E. R. Anderson. Dr. Anderson described early work, discovery and isolation of Vitamin K and his own experiences in the investigation of the subject. Discussion was by E. W. Janes.

Homer Dudley, president of the Washington State Medical Association, discussed the work on the state and county Constitution and By-Laws, medical preparedness, the Defense Fund and the development of the old age assistance program.

Mr. Arthur Anderson, executive secretary of the Washington State Medical Association, then spoke on his experiences at Olympia during the recent meeting of the Legislature.

SPOKANE SURGICAL SOCIETY

The annual meeting of Spokane Surgical Society was held at Davenport Hotel, Spokane, April 19. Guest speaker was Alfred Blalock, recently appointed professor of surgery at Johns Hopkins University.

The morning session consisted of a number of talks on specialized topics by R. G. Andres, E. S. Jennings, C. R. Mowery and A. O. Adams, all of Spokane, and W. O. Clark of Lewiston, Idaho. In the afternoon W. E. Grieve, M. H. Querna, E. M. Welty, J. W. Lynch, R. E. Ahlquist, D. H. Lewis, F. E. Ross, F. D. Rose and R. D. Reekie, all of Spokane, talked on technical subjects.

T. Maurice Ahlquist was installed as president, succeeding James G. Matthews.

WALLA WALLA VALLEY MEDICAL SOCIETY

April meeting of Walla Walla Valley Medical Society was held at the Grand Hotel, Walla Walla, April 10th. A scientific program was presented by the neoplastic committee of the state association. Papers were read by C. B. Ward, Donald Trueblood and R. E. Mosiman of Seattle. Dr. Ward showed colored slides of various lesions, then asked those in attendance for their ideas on treatment. Dr. Trueblood presented statistics showing that from 1921 to 1935, cancer killed almost seven times as many people as all six of the wars in which the United States has been engaged. He also stated that cancer deaths outnumber traffic fatalities four to one.

YAKIMA COUNTY MEDICAL SOCIETY

The regular meeting of Yakima County Society was held at Commercial Hotel, Yakima, April 14. Lawrence Selling of Portland read the paper of the evening on "Low Back Pain." Thirty members and guests were in attendance.

WOMAN'S AUXILIARY

HYGEIA

One million and a half people are reading *Hygeia* in the physicians' offices throughout the country. This was estimated from a survey made last year. If this estimate be at all accurate, then indeed is *Hygeia* being read by millions of others who find the magazine available to them. When we stop to think that it is the only authentic health publication on sale to the public in this country, we are amazed that it is not read more widely.

But Mr. John Doe Public must choose *Hygeia* from a tempting array of gaudy literature, all claiming to be health magazines. How is he to know which to select? That is where the women's auxiliaries have helped to fill an urgent need. It is the members of the *Hygeia* committees that have given hours and hours of their time placing *Hygeia* in just the right places.

It takes personality and shoe leather to sell a magazine, and our good looking committee members can talk people into buying *Hygeia,* but the magazine itself must make them want to read it. *Hygeia* has improved a hundred per cent in content and attractiveness of set-up in the past five years. It has been published for seventeen years, but not until it was made more interesting to the average person did its circulation climb to spectacular heights.

The state of Washington set an enviable record again this year in its *Hygeia* work. We won the second state prize ($25) in the national contest. Chelan County won first prize ($40) in Group II. Walla Walla Valley won third prize ($15) in Group III. Yakima County was given honorable mention. Cowlitz, King, Kitsap, and Pierce counties were each mentioned as having reached or gone over their quota for the year. A total of eight counties (out of a possible thirteen) being mentioned in the national contest.

Mrs. Martin Norgore,
State Hygeia Chairman.

UTILIZE SPEAKERS' BUREAU

The Committee on Postgraduate Medical Education and Hospitals desires that the physicians who have volunteered their services be scheduled by the county medical societies for 1941. The subjects, with names of the speakers, are published in alphabetical order in this and subsequent issues until all have been listed. Requests for speakers should be made as far in advance as possible direct to the Committee on Postgraduate Medical Education and Hospitals, 218 Cobb Building, Seattle.

(*Continued*)

King, R. L.; 1115 Terry Ave., Seattle.
1. Diagnosis of Heart Disease.
2. Treatment of Heart Disease.
3. Coronary Artery Disease.
4. Electrocardiography.
5. Heart Disease and Surgery.
6. Treatment of Auricular Febrilation.
7. Special Methods for Study of Heart Function.

Kretzler, Harry H.; Edmonds.
1. Rabies.
2. Blood Transfusion.

Larson, Chas. P.; Tacoma General Hospital, Tacoma.
1. Thrombosis and Embolism.
2. Trichiniasis in State of Washington.
3. Status Thymolymphaticus and Related Syndromes.
4. Various Neuropathologic Subjects.
5. Various Phases of Neoplastic Diseases (from Pathologic Standpoint).
6. Thrombosis and Embolism.
7. Trichina Study.

Lawrence, E. J.; Medical-Dental Bldg., Spokane.
Importance of Prenatal Care.

Leavitt, D. G.; 1011 Summit Ave., Seattle.
1. Surgical Treatment in Arthritis.
2. Skeletal Tuberculosis; (a) Surgical Treatment, (b) Diagnosis.
3. Suppurative Arthritis.
4. Surgical Treatment of Flat Feet, etc.

Leavitt, Harry L.; 1011 Summit Ave., Seattle.
1. Spinal Fusion Operation and its Indications.
2. Treatment of Acute Low Back Pain.
4. Lateral Curvature of Spine (Scoliosis) and Conservative Surgical Treatment.
5. Industrial Back Injuries.
6. Confusing Conditions of Osseous System often Misinterpreted as Fractures.

LeCocq, John; 1011 Summit Ave., Seattle.
Any Subject Pertaining to Orthopedics, Bone Joint Tuberculosis, Osteomyelitis, Infantile Paralysis, Fractures, etc.

PROGRAM OF SUN VALLEY MEETING

1. William Dock,
Professor of Pathology.

2. Maurice L. Tainter,
Professor of Pharmacology

3. David A. Rytand,
Assistant Professor of Medicine.

FACULTY FROM STANFORD UNIVERSITY SCHOOL OF MEDICINE, SAN FRANCISCO

4. Carleton Mathewson, Jr.,
Associate Professor of Surgery.

5. Nelson J. Howard,
Assistant Clinical Professor of Surgery.

PRESIDENT'S MESSAGE

Pocatello, Idaho, April 25, 1941.

At the present time with the world facing a total war and our own country in a precarious state, it will be well for us to pause and give thought to the present and start planning for the future. We need, at this time more than ever before, a larger membership in our state society and well coordinated action on some of the problems that confront us. It is possible to increase our membership if every member truly interested would contact the men who have not manifested an interest in the society and take time to explain what the state society has done and is doing for the doctors of the state. We not only need the help that an increased membership can give in solving some of our future problems, but we need the revenue that will accrue from a larger membership.

In the coming year or at most the next few years we are destined to see much legislation that goes much farther in socializing medicine. There is probably little that we can do to stop this legislation, but there will certainly be opportunities for bargaining and advantages to be gained by collective action.

It is to be earnestly hoped that we will have a larger membership this year than ever before, and that there will be a larger attendance at the Sun Valley meeting than we have had in the past. Please remember that your state society means more to you than any other medical organization, and membership makes you a part of our national organization. Make a special effort to attend the state meeting this year, as there are questions to be discussed that are vital to each of us.

A. M. NEWTON, *President.*

GENERAL INFORMATION

Instruction courses will be given by members of the Idaho Association as last year. Full program of this feature will appear in the June issue.

Meetings, scientific and commercial exhibits will all be held in Sun Valley Lodge.

Accommodations for registrants may be obtained in Challenger Inn or The Lodge. Reservations should be made promptly.

A golf tournament has been arranged for Friday, June 20th, and a bowling tournament has been scheduled for those who do not wish to play golf.

A full program of meetings and entertainment has been planned for the Woman's Auxiliary.

PROGRAM

Duchin Room, Sun Valley Lodge

Wednesday, June 18

9:00 a.m.—Introduction of Guests. President's Address. Reports of Committees.
10:00 a.m.—Dr. Dock, "Etiology and Pathology of Hypertension."
11:35 a.m.—Dr. Rytand, "Management of Hypertension."
12:35 p.m.—Round Table Luncheon.
2:05 p.m.—Dr. Tainter, "Practical Application of Sympathicomemtic Drugs Including Benzedrine."
3:05 p.m.—Dr. Mathewson, "Diagnosis and Treatment of Bowel Obstruction."

Thursday, June 19

10:30 a.m.—Dr. Howard, "The Endocrine Basis of Benign Lesions of the Breast."
11:35 a.m.—Dr. Dock, "Causes of Peptic Ulcer and Their Control."
12:35 p.m.—Round Table Luncheon.
2:05 p.m.—Dr. Mathewson, "Surgical Treatment of Peptic Ulcer."
3:05 p.m.—Dr. Tainter, "New Remedies Used in Gastrointestinal Disease, Including Colloid Laxatives."
7:30 p.m.—Annual Banquet.

Friday, June 20

9:00 a.m.—Meeting, House of Delegates.
10:30 a.m.—Dr. Tainter, "Medicinal Treatment of Asthma and Other Allergies."
11:35 a.m.—Dr. Rytand, "Management of Bright's Disease."
12:35 p.m.—Round Table Luncheon.
2:05 p.m.—Dr. Howard, "Pathology and Clinical Features of Disease of Tendons."
3:05 p.m.—Dr. Mathewson, "Ambulatory Treatment of Fractures of the Lower Extremity."
4:00 p.m.—Golf Tournament. Bowling Tournament.
7:30 p.m.—Stag Banquet.

Saturday, June 21

10:30 a.m.—Dr. Howard, "Common Injuries to the Heart."
11:35 a.m.—Dr. Dock, "Cancer From the Pathologist's Angle."
12:35 p.m.—Round Table Luncheon.
2:05 p.m.—Dr. Rytand, "Nature and Treatment of Obesity."
3:05 p.m.—Dr. Tainter, "Present Status of Sulfanilamide Derivatives."

Commercial Exhibitors

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SUN VALLEY

—Photographs of Sun Valley and vicinity courtesy of Union Pacific Railroad Co.

Summer treads on the heels of spring at Sun Valley, while winter lingers among the mountain peaks. Well into May skiers in shorts leave the green of the Valley to glide down the runs on 9,200-foot Baldy, or to range the snow-packed trails further afield.

With growing warmth of the sun, the quaint village nestled in a bowl of the rugged Sawtooth Mountains —gabled roofs, meadows, hillsides, ponds and streams might have been transplanted from the Swiss Alps—becomes a serene center of outdoor enjoyment. All around lie the scenic beauties of one of America's last great primitive areas, within a stone's throw of the comforts and luxuries provided by this modern and complete resort development.

Sun Valley has been described as resembling a seaside ranch in the mountains. Hotel appointments and facilities are of the metropolitan quality that makes for convenient and pleasant living. There is swimming in two open air pools. An endless number of trails invite exploration on splendid saddle horses. One of the few outdoor summer ice rinks in the country furnishes the novelty of skating in warm weather. Golfers find the nine-hole, 18-tee golf course sporty. Skeet and trap shooting, tennis, boating and canoeing, bowling and bil-

WOMEN'S AUXILIARY

PROGRAM

Sun Valley, June 18 to 21, 1941

Wednesday, June 18

9:00 a.m.—Past President's Breakfast.
10:30 a.m.—Executive Board Meeting.
1:00 p.m.—Auxiliary Luncheon.
Greetings from Dr. A. M. Newton, President of Idaho State Medical Association.
4:00 p.m.—Tea. Reports from National Auxiliary.

Thursday, June 19

9:30 a.m.—General Business Meeting.
Reports and business.
Election of officers.
1:00 p.m.—Auxiliary Luncheon.
Address—Guest Speaker, Stanford University Medical School.
4:00 p.m.—Tea.

Friday, June 20

10:30 a.m.—Organization of New Board.
1:00 p.m.—Auxiliary Luncheon.
4:00 p.m.—Tea.

A whirl of activities are planned to suit everyone's taste. Prizes and surprises galore. Bring your golf paraphernalia, your swimming outfits, riding togs and all the rest. Practice up on your bridge game and bring your favorite bottle of liniment for lame muscles.

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liards, archery, and bicycling offer a choice of recreations to meet every taste.

Sun Valley sojourners dine under the stars on the terrace of the Lodge, where a dance band plays, while skaters, including Olympic star Audrey Peppe Benner do spirals and spins on the rink across the lawn. Or dinner can be a picnic affair on the barbecue grounds of rustic Trail Creek Cabin, two miles to the north of Sun Valley; perhaps a he-man meal prepared by skilled camp cooks over an open fire in the unspoiled outdoors. Nights are cool for sleeping in this valley lying 6,000 feet up.

Roughing it at Sun Valley is an easy and comfortable undertaking. Pack trips into the wilderness country of Idaho's National Forest, hiking and mountain climbing, expeditions to easily accessible lakes and streams where the abundant game fish bite at the drop of a hook, adventures on horseback among the hills—that kind of fun beckons the strenuous lovers of outdoors.

For those who want to rest, relax and bask in the sun the extent of exertion may be a ride up the 11,000-foot electric ski lift to lunch at the Roundhouse on Baldy Mountain, and enjoy the magnificent scenic panorama. Sightseers visit the interesting country near the resort to marvel at the strange lava formations of the Craters of the Moon, the Shoshone ice caves or the petrified forest near Challis.

Children have endless exciting things to do at Sun Valley, whether they are tots who frequent the supervised playground; or older youngsters who bicycle and swim. Of special interest to parents is the fact that this season Mr. and Mrs. Donald R. MacJannet, after twenty years in the French Alps, are starting at Sun Valley the first Alpine camp in America, patterned after their famous camp abroad.

Silver Creek, near Sun Valley, has been called "the finest dry-fly stream in the world." This is because the banks of the meandering little river are completely free from overhanging brush to snag tackle, and the waters abound in big, wily rainbow trout that match wits with the most expert fisherman.

The primitive Sawtooth Mountain region adjacent to Sun Valley in south-central Idaho abounds in tiny lakes, some of them never fished by a white man. Odd species of fish often are found in these lakes, their outlets cut off by geological changes ages ago. Redfish Lake, one of the largest and most beautiful, and located near Sun Valley, is the only known habitat of a dwarfed species of salmon called redfish. Originally a sockeye, these salmon were trapped in the lake and developed into the curious species which intrigues anglers. Redfish may be caught during June and July; then they sound to the 1,400-foot depths of the lake until another year.

MEDICAL NOTES

Attorney-General Rules on Alcoholics. Upon request from Lewis Williams, director of charitable institutions, Attorney-General Bert H. Miller has ruled as follows: "It is the opinion of this office that a person subject to inebriety is afflicted with a mental disease. . . .

"In substance the statute provides that any person within the state of Idaho, who is afflicted with or who deems or suspects himself of being afflicted with any mental disease, may be admitted to the State Hospital South or the State Hospital North for observation, diagnosis and treatment, without being committed to such hospital by order of the court. . . .

"In view of . . . the benefit to the general public from having cases of mental disease given prompt diagnosis and treatment, it is my opinion that the legislature intended this statute to be mandatory."

Students Tour Hospital. Classes in psychology from Idaho Southern were recently taken through Idaho State Hospital South at Blackfoot as part of their course of instruction.

Official Position. R. L. Norse of Boise has been appointed physician to the Old Soldiers' Home at Boise.

Locations. Herman W. Schwezer has moved from Fort Hall, Idaho, to Poplar, Montana.

OBITUARY

Dr. John Irvine McKelway, superintendent of State Hospital North at Orofino, died suddenly April 7th. He was 66 years of age. He was born in Philadelphia, Pa., Dec. 23, 1875, and received his medical education at the University of Pennsylvania School of Medicine in Philadelphia, graduating in 1897. He worked in a psychiatric institution in Philadelphia for a time after graduation, and in 1902 entered state hospital work in New York. In 1914 he went to Eastern Oregon Hospital at Pendleton and in 1918 joined the army medical corps. From 1921 to 1926 he was at Western Washington State Hospital at Steilacoom and left that position to assume superintendency of the Orofino Hospital in 1926.

NORTHWEST MEDICINE

THE JOURNAL OF THE STATE MEDICAL ASSOCIATIONS OF OREGON, WASHINGTON, IDAHO

ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION

Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879. Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 3, 1917, authorized July 31, 1918.

Vol. 40, No. 6 JUNE, 1941 $2.00 per Year

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This journal goes to press the first day of the month Material for publication should be received by the 25th of the preceding month.

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Reprints will be furnished by the printer according to the schedule of prices which accompanies the galley proofs submitted to the author. The order for reprints should accompany the returned galley proofs. The printer holds the type until the first of the following month.

◆

Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

MEDICAL INDUSTRIAL PREPAREDNESS

Appreciation of the part of medicine in defense industry is growing apace with the rapid expansion of industry itself. Employers are beginning to realize that medicine can help them to reduce occupational disease, lower the rate of accidents, improve efficiency, eliminate fatigue and reduce spoilage. Even the smaller plants may soon have available service which will help them increase production. As the demand grows for greater and greater production, more and more speed, the necessity of medical help will become more and more apparent.

Medical industrial preparedness divides itself into two main functions which are, the development of trained personnel and the study of industrial hazards peculiar to defense industry.

In order to expedite application of scientific medicine to industry the Council on Industrial Health of the American Medical Association has met in joint session with a Subcommittee on Industrial Health and Medicine of the Federal Security Agency to formulate plans which will develop these two functions. It has been brought out, in this joint meeting, that committees of the state associations must work closely with bureaus of industrial health in state health and labor departments to further industrial medical preparedness.

Research is needed on trichlorethylene, carbon tetrachloride, acetone, the methyl, ethyl and butyl ethers of ethylene glycocol, toluol, TNT, lead and sodium azide, cadmium dust and smoke, exposure to infra red radiation as in drying lamps, effects of welding operations and the effects of many of the above agents on animals infected with tuberculosis.

It is expected that numbers of physicians will be specially trained in new phases of preventive industrial medicine and that short courses of instruction will be given to practicing physicians to acquaint them with the best methods of preventing and curing industrial diseases. All programs proposed carry recommendation that illnesses of workers be cared for by their own physicians but that the industrial committees or services act in a consulting, advisory or educational capacity.

Robert Legge of Berkeley, member of the faculty of the University of California and a member of the Council on Industrial Health of the A. M. A., has submitted to the Alameda County Society a plan to be known as the Berkeley Plan. This includes a pre-employment physical examination, refresher courses for private physicians, periodic meetings on industrial medicine and hygiene and service to small industrial units which are not able to afford full time medical service. The plan presumes that actual medical services to individuals will be rendered as at present but that all participating in the care of workmen will also participate in the studies which will be undertaken.

It is expected that the plan will solve the problem of better health and safety for small plants, develop improved efficiency, decrease accidents and illness, promote better relationships between employer and employee and cut down absenteeism with its economic end results. It will maintain free choice of physician, and improve relations with insurance carriers and labor organizations. It is expected that expenses entailed will be balanced by savings in premiums, enhanced productivity of the individual worker and decrease in compensation.

Thus it is once more shown that medicine will be called upon to play a role of increasing importance in the great program of national defense. Surely the profession should be gratified that its skill and knowledge and abilities are now receiving their due recognition.

EMILY L. LOVERIDGE—A GOOD SAMARITAN

Death of Miss Emily L. Loveridge has removed one who contributed in a major way to medicine in the Pacific Northwest.

Miss Loveridge was born in Hammondsport, New York, on August 28, 1860. Following graduation from the Bellevue Hospital School of Nursing in 1890, she came to Portland, Oregon, then a city of about seventy thousand—and on June first of that year assumed charge of the newly organized School of Nursing at Good Samaritan Hospital. She served continuously for forty years, first in the Training School for Nurses and then as Superintendent of the Hospital.

Other schools of nursing had existed in the Pacific Northwest prior to Miss Loveridge's advent, but they were all shortlived. The training school organized by Miss Loveridge was the first school in the region to experience an existence which has continued up to the present and which remains as a symbol of her unquenchable courage and honesty, indefatigable energy and an apparently fathomless kindliness and charity.

During the period of her active service in the Good Samaritan Hospital it is probable that there were few localities in the Pacific Northwest where her name did not symbolize to many the living spirit of the Good Samaritan.

Trained during the Listerian era of antisepsis, Miss Loveridge progressed into the period of surgical asepsis, always ready to cooperate with members of her hospital staff, to adopt new methods, to abandon obsolete techniques, and to accept changing concepts of hospital administration and responsibility. The help she gave to nurses, young physicians and patients will never be known.

Her death occurred at the Good Samaritan Hospital on April 26, 1941, but her life "like a dome of many-colored glass, stains the white radiance of eternity."

PACIFIC NORTHWEST MEDICAL ASSOCIATION

Pacific Northwest Medical Association last year resumed its splendid program of post graduate lectures after a lapse of two years. The meeting of 1940 held in Spokane was so successful that the decision was made to follow with another meeting in the same city this year. Spokane may therefore become the permanent meeting place of the organization which formerly held its sessions in a different northwest city each year.

A truly ambitious program has been arranged for the meeting this year which will be held at the Davenport Hotel June 25 to 28 inclusive. No less than ten speakers have been engaged, all of outstanding merit as lecturers and instructors.

A most commendable feature of the 1941 meeting will be a staggering of lectures and sessions in order to provide some time for informal discussion and play. Those who attend many meetings often state that the most valuable are those in which there is a program of papers and lectures scheduled for the forenoon sessions with the afternoons absolutely free. Thus the meeting with others and discussion of mutual problems in small informal groups might well prove to be the most valuable reward for attendance at a medical meeting.

Caliber of the speakers at the Spokane meeting, however, leaves little doubt that the formal lectures will well repay those who attend this meeting. Full program appears on page 5.

FOURTH OF JULY ACCIDENTS

Accidents due to fireworks used in celebrating independence day numbered 4,462 last year. Many of these were serious and at least fifteen resulted in blindness. All were unnecessary. All could have been prevented.

A number of states have passed legislation banning fireworks and, where enforced, these measures have resulted in a marked reduction of the number of such needless injuries. Indiana reported only two injuries in 1940 with an effective law in force for the first time that year. The same state had approximately two hundred such accidents in 1939.

Such an example might well be heeded by other states. Surely there are ways of celebration of this holiday less dangerous to life, limb and eye sight than the reckless and indiscriminate burning of gun powder.

NEW PLASMA BANK TECHNIC

An important contribution aimed at solving the problems of safely collecting, storing and transporting plasma is reported in the May-June issue of *War Medicine*, published by the American Medical Association in cooperation with the Division of Medical Sciences of the National Resaerch Council.

Elmer L. De Gowin, M.D., and Robert C. Hardin, M.D., Iowa City, report that they found that large glass flasks, such as are used in hospitals for the storing and administration by vein of various solutions, when equipped with a permanent rubber stopper allowing self-closing needle punctures, were eminently suitable for the collection, storage and administration of whole blood or of blood plasma.

The question of storage of such flasks under proper refrigeration involved the problem of devising some means by which it would be indicated whether or not refrigeration had been properly observed during the history of the blood specimen.

With the assistance of two other men, a simple glass tube was designed into which was poured at room temperature an acid mixture which was found to have a melting point between 50 F. and 55.4 F. A red or blue glass bead was inserted which sank to the bottom. The mixture was then solidified by immersing the tube in an ice bath, and a similar glass bead was placed on top of the solid fatty acids. The tube was corked tightly and attached to the neck of the flask by a rubber band.

"If the tubing was heated to the melting point of the mixture for about ten minutes," the two authors say, "the upper bead sank, and thereafter both beads remained together no matter in what position the two might be when the mixture was refrozen."

ORIGINAL ARTICLES

TRAUMATIC COMPLETE HEART BLOCK OF EIGHTEEN YEARS DURATION

WITH REVIEW OF LITERATURE

T. H. Coffen, M.D.
H. P. Rush, M.D.
R. F. Miller, M.D.

PORTLAND, ORE.

In 1930 one of us[1] reported the case of a boy who, when three years old, sustained a severe fall; from then on his mother noted a constantly slow regular pulse. At the time of examination in 1929, when he was ten years old, he had complete auriculoventricular block. He has been seen frequently since 1929 and, while the heart block persists, the boy is now twenty-one, has developed normally, is physically active and has no symptoms of cardiac strain or Stokes-Adams syndrome.

The case is here reported again because of the rarity of complete heart block from heart injury and because we have seen and examined him from the ages of ten to twenty-one. The heart block has persisted for eighteen years. We here abstract the original report:

> K. K. was first seen and examined in 1929 when he was ten years old to determine the cause of a slow pulse. When he was three years old (1922) he fell from a wood pile four or five feet high; his mother said he fell on his chest and came into the house crying and complaining of abdominal pain. There were no visible signs of injury on the body. Dyspnea and cyanosis were absent. The child was in pain all night. The mother said his pulse was slow, about 60 per minute, regular, while before the accident it had been 70 to 80 per minute.
>
> Because of the abdominal symptoms, considered then to be due to intestinal obstructions, he was operated upon; no abdominal pathology was found. His pulse dropped to 36 and his condition was critical for a few days but there was then gradual improvement so that within a few months he was quite normal and had had no illness since. Just before the accident he had scored 98 per cent in a baby welfare clinic. He had always been a healthy child, having been delivered normally and he had not been a blue baby. There had been no childhood diseases.
>
> Our first examination, April 20, 1929, showed the boy to be healthy in appearance; his height 4 feet 7¾ inches, his weight 70 pounds, color good, no cyanosis, pallor, abnormal pulsations in the precordium or superficial vessels, except in the recumbent position there was a positive wave in the neck vessels suggesting auricular contractions about 86 per minute, while the pulse rate was 48 per minute, regular. Eyes, ears, nose and throat were negative. There was no adenopathy. The thyroid was not enlarged. The chest was symmetrical and negative on examination; the fingers were not clubbed. The heart borders were within normal limits to percussion, though there was thought to be some increase in dullness in the region of the left

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[1] Coffen, T. H.: Complete Heart Block of 7 years Duration in Child Resulting from Injury, Am. Heart J. 5:667-670, June, 1930.

auricle and pulmonary conus. There was a systolic murmur at the pulmonic area, louder in the recumbent position. There was also a faint systolic murmur at the apex. Blood pressure was 90-95/80. Abdomen was negative, liver not felt. Reflexes were normal. Urine and blood examinations were normal.

Electrocardiograms showed complete auriculoventricular dissociation, the auricular rate being 80 while the ventricular rate was 40-44 per minute. The P complexes showed no time relation to RT. The latter were normal. An orthodiagram showed a globular type of heart with some fullness in the pulmonary conus. In the right anterior oblique view the retrocardiac space was narrow but no abnormality was noted when barium paste was swallowed. In the left anterior oblique the shadow of the left ventricle over-rode the spine by about one-half inch. There were no abnormalities about the aorta. A roentgenogram showed no shadow in region of the thymus nor was there any shadow suggesting substernal thyroid enlargement.

Yearly examinations have shown a growing young male in excellent physical condition with normal findings except for the heart block which has remained complete. He never has shown any cardiovascular symptoms, never felt faint nor dizzy nor has he fainted. His blood pressure has been approximately 90 systolic and 50 diastolic with a pulse rate of 40-50 per minute with slight exercise response, the pulse before exercise being 40, after hopping 20 times on each foot, 43-44 per minute with no objective nor subjective signs. A slight cardiac enlargement has developed, particularly to the left, with a corresponding development of left axis deviation in the electrocardiogram. A systolic murmur has remained over the pulmonic area and a slight accentuation of P2 has been consistently noted. A soft systolic murmur at the apex has been noted only occasionally on examination.

The patient was seen in September, 1938, prior to entrance into college for his freshman year. He was in excellent health. He has been allowed to lead a normal life but was advised to avoid severe physical strains. At this time his blood pressure was 92/50; pulse regular, 39 before exercise and 43 after. No abnormal pulsations were seen in neck vessels or precordium. There was some slight increase in lower sternal dullness. Percussion note over the second and third left interspaces was slightly increased to the left. A systolic murmur was heard over the pulmonic area with some accentuation of P2, fainter when a deep breath was held and louder when the breath was held after forcible expiration. The liver was at costal margin, the spleen was not palpable and there was no edema of extremities. There was no cyanosis and no clubbing of the fingers. Blood and urine examinations and Wassermann were negative.

The patient was last examined Sept. 7, 1939. He now had the appearance of a normal male, 5 feet 9½ inches tall and weighing 170 pounds, age 21. He had been well during the past year in college. He worked in a blacksmith shop one term for three hours three times weekly in industrial arts; the use of a heavy hammer caused no discomfort. During the summer of 1939 he worked in a railroad shop for a week shoveling one ton of coal a day with no symptoms. He was then promoted to the railroad mail service, handling mail sacks weighing from 50 to 125 pounds. On one occasion he ran about one and a half blocks, pushing a heavy mail truck, to catch a train without difficulty.

Examination showed a pulse of 48 per minute, regular. Blood pressure was 122/72. There were no abnormal pulsations in neck vessels or precordium but one could detect extra beats in the jugular, between the normal "cv" waves, suggestive of auricular pulsations because they were about 90 per minute (auricular rate in electrocardiograms was 90). Cyanosis, edema and dyspnea were absent. There was no evidence of congestive failure. There was no adenopathy. The thyroid was not felt. Hirsuties normal. The heart borders appeared normal on percussion. A soft systolic murmur was heard at the apex, increasing in intensity along left sternal border and loudest over pulmonic area; second sounds at the apex and pulmonic area were sharp and clear. Abdomen and extremities were normal; neurologic examination showed no abnormalities. Urine and blood examinations were negative. Roentgenogram of chest showed no abnormalities, although there was a slight bulge to the left in region of the pulmonary conus. Electrocardiograms show a ventricular rate of 41, regular, an auricular rate of 80 with complete dissociation. Electrocardiograms after exercise showed ventricular rate to be 48, auricular rate 92-94.

While congenital lesions must be thought of, the only suggestions of such a condition are the systolic murmur over the pulmonic area, which has not changed in ten years, and the slight bulge in the region of the pulmonary conus. Comparison of roentgenograms made over a ten year period show change in contour from the youthful globular shape of the heart to adult type now, with some tendency to increase the left ventricle shadow. Furthermore, the mother, an unusually intelligent person, had noted normal pulse rate during infancy with abrupt slowing at time of accident, persisting to the age of ten, when she brought the child for examination because of this. The baby welfare examiner, just before the accident, had noted no abnormality in appearance, pulse rate or heart murmurs. For these reasons it seems logical to consider that the heart block resulted from the injury, which caused lesions in the auriculoventricular bundle. As shown below in a review of the literature, various authors have surmised this to happen and experimental evidence and autopsies bear out this opinion.

Because of the rarity of complete heart block from nonpenetrating chest injuries and because this occured in a three year old child who has been examined repeatedly in the last eleven years, the block persisting, we have reviewed the literature.

Review of Literature

EXTERNAL VIOLENCE; NONPENETRATING WOUNDS

For centuries physicians have been interested in the effect on the heart itself of penetrating wounds, blows over the heart or severe injuries to the chest*.

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*According to Warburg[2], Hollerius (1490-1562) was of the opinion that a wound in the heart might heal. Cardanus (born in 1500) observed a lacerated pericardium which healed. Borch (1676) probably reported the first case of heart injury from a blow to the chest. Blancard (1688) reported a case of purulent pericarditis resulting from a blow to the chest. (Warburg comments upon the fact that for the next 200 years only 26 more cases were published). Boirelli in 1862 is probably first (Warburg) to report a gun-shot wound causing a lesion of the heart muscle and hemopericardium. In 1868, V. G. Fischer presented a very complete study of 452 cases of traumatic heart lesions; 76 were due to injury with blunt objects

2. Warburg, E: Traumatic Heart Lesions. Subacute and Chronic Pericarditis due to Nonpenetrating Injuries. Oxford Press, London, 1938.

It is possible that injury to the heart may be unrecognized but that it is rare is shown by Glendy and White's** observation that in an active accident service there was not one such case in 7000 admissions to a large hospital. In our own experience heart injuries are rare.

There appears to be little on the subject in the early 1900's, although Kotschenreuther[3] (1909) reported the case of a man struck over the heart with an iron bar; autopsy showed a tear in the septum but there was no bradycardia or disturbance in rhythm. Injuries to the septum also have been reported by Husten[4], Kampmann[5], Aschoff et al[6], R. Stern[7], Terillon† and Rosenthal†. Barnett's book[8] in 1909 deals with general injuries to workmen, in which he refers to injuries around the heart. Barie[9] (1881) and Kulbs[10, 11] (1909) reported experiments on dogs and rabbits; hemorrhage in myocardium, pericardium and endocardium, heart rupture, valve rupture and disturbances in rhythm were produced. Other experimental work has been reported by Schlomka[12], Beck[13], Moritz and Atkins[14], and Kissane et al[15].

Stab wounds have been discussed by Cox[16] in 1928, Biggers[17] in 1932, Singleton[17a] in 1933 and Beekman[18] in 1933. Surgical treatment of heart wounds has been discussed by Aschoff[6] (1917) writing of sudden death from service injuries; Constantini[19] in 1920 and Cecchini[20] in 1925; Ballance[21] wrote a monograph on the subject in 1920.

Unusual bullet wounds of the heart have been reported by Fischer[22] (1919), Shaw et al[23], Vance[24], Schmidt-Weyland[25], and Shoemaker and Echels[25a].

Angina from nonpenetrating injuries and evidence of an infarct have been noted by Boas[26], 1939, Warburg and others.

Rupture of the heart or valves from traumatism has been reported by Barie[9] and Beck[13], Bright and Beck[27], Caldwell[28] and Saphir[29] and Bilderbeck[30].

Cardiac aneurysm from injury was reported by Dionis in 1716 (cited by Warburg) and by Joachim[31] in 1926.

There are numerous references to spontaneous rupture of the heart but these are not related to blows, crushing or falls; in reading these articles one is impressed with the possibility of the presence of coronary disease resulting in myomalacia. Articles on this subject have been written by Buckley[32], Barber[33], Krumbhaar[34], Nuzum and Hagen[35] and de la Chapelle[36].

Disturbances in rhythm have been seen experi-

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and of these there were 7 "contusions" of the heart and 69 with traumatic rupture.

Penetrating injuries of the heart were described well by Luxembourg (1910) and Robic (1912) and Constantini (1920), and it was then known that people may live a long time with projectiles in the heart. A monograph on this subject appeared by Stephans in 1936. Geill in 1900 and Urbach in 1922 (monograph) discussed immediate death from nonpenetrating injuries. Urbach quoted 480 publications and studied 1000 autopsies of injuries to the chest; there were 185 lesions of the heart. In Warburg's opinion Stern's book, 1909 and 1930, was the best to date.

**Glendy, R. E. and White, P. D. Section on Heart Injuries, Brahdy and Kahn q.v.

†Cited by Husten

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34. Krumbhaar, E. B. and Cromwell, G.: Spontaneous Rupture of Heart — Review of 22 Unpublished Cases and 632 from literature, Am. J. Med. Sc., 170:828-836, Dec., 1925.
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mentally and reported clinically. These are extrasystoles, bundle branch block, partial and total auriculoventricular block, nodal rhythm, paroxysmal tachycardia, auricular flutter and fibrillation. Fibrillation has been written of by Levinson,[37] Hay and Jones[38], Warburg and Stormer[39]. It is assumed by these authors that the abnormal rhythm results from injury in the myocardium. Kahn and Kahn[40] in 1929, discussing the matter of heart injury, brought the whole subject up to date.

Several books have appeared in recent years with comprehensive bibliographies.[2, 7, 8, 21, 41, 42, 43.]

In summarizing the literature the following groups stand out:

COMPLETE AURICULOVENTRICULAR BLOCK FROM NONPENETRATING INJURIES PROVED BY GRAPHIC RECORDS

There are only six of these so far as we can determine, as follows:

1. Laubry, Block and Meyer,[44] 1921: A woman of 25 was struck over the heart by a carriage shaft, seen in May, 1921; slow pulse since 1916, heart rapid and irregular at first for 12 hours, then slow and regular.[40] Polygrams and electrocardiograms showed complete block.

2. Gallivardin,[45] 1922: A man, 19, was kicked in the left chest by a horse in 1917; when seen two years later the pulse was 47-52, regular, and auriculoventricular block was demonstrated by polygrams. Gallivardin thought there was no doubt that the block resulted from the injury. This persisted in 1921 when reexamined.

3. Coffen, 1929: A boy of 3 fell with resulting shock, slow pulse, etc. When seen at the age of 10, electrocardiograms showed complete auriculoventricular block. He had no symptoms. He has been seen yearly since (10 years), has grown normally and without symptoms.

4. Tuohy and Bowman,[46] 1930: A man, 70, fell with a heavy sack striking his chest. He was in shock and electrocardiograms showed complete block. Five weeks later the rhythm was normal but he now had bundle branch block.

5. Schilder,[47] 1935: A man of 66 was struck by a carriage shaft, pulse 36, electrocardiograms showed a 2:1 block, d. in Stokes-Adams attack. When 10 years old (56 years before) he was kicked in the chest by a horse. Had attacks of paroxysmal tachycardia in succeeding years. Seen by author in 1933 in attack lasting eight days.

6. Warburg, 1937: A man of 58 fell from second story scaffolding and after 1 week had edema of the lower extremities, now an apical systolic murmur, enormous heart (x-ray). Electrocardiogram showed nodal rhythm alternating with auriculoventricular block, eighteen months after trauma not able to work and now had permanent auriculoventricular block.

TRAUMATIC COMPLETE AV BLOCK FROM HISTORY, NO GRAPHIC RECORDS

1. Howatt,[48] 1920: Reported a case of man 63 crushed between R.R. cars. Pulse rate was 30 to 60 and regular. No graphic records.

2. Traubaud and Mudden,[49] 1937, reported a case of a camel driver who was hurt when his camel fell upon him. Immediately afterwards he had Stokes-Adams syndrome with a slow pulse which persisted for five years before he was seen by the authors. From their examination and from the clinical records as given by them, it is obvious that the man had a bradycardia from complete heart block.

3. Kampmann in 1935 reported the case of an omnibus driver who was struck by the auto crank in the chest when his motor kicked, in 1932. There was syncope, and bradycardia when seen by the author in 1934. The man showed partial auriculoventricular block.

COMPLETE BLOCK FROM PHYSICAL EFFORT, GRAPHIC RECORDS OR NONE

As noted above physical effort has been found to be a cause of heart injury, particularly heart rupture. Heart block also occurs as in the two cases following:

1. Tuohy and Bowman in 1930 reported a case of a man of 43 who, upon extremely heavy physical effort, fell unconscious, was in shock and his pulse was 26 and regular. The authors assume that this man had complete block, although no electrocardiograms were made at the time. When seen 15 months later, electrocardiograms showed partial auriculoventricular block.

2. Painewsky, in 1912 (cited by Warburg), reported the case of a man who, following sudden severe lifting, developed symptoms that suggested complete auriculoventricular block. No electrocardiograms were made and when seen by the author he found that the man had had Stokes-Adams attacks for 18 years.

PARTIAL HEART BLOCK FROM HEART INJURY, PROVED BY ELECTROCARDIOGRAMS

1. Rosenson,[50] in 1924 reported a boy of ten who was struck in the chest by a fist blow. When examined by the author, electrocardiograms showed a partial block of varying grades but the rhythm returned to normal within two months and the child remained well.

2. The second case is that of Kampmann referred to above, who had partial block when seen here two years after.

3. Warburg, 1937. This case is cited above under complete block, though immediately after the fall from scaffolding he showed partial auriculoventricular block.

COMPLETE HEART BLOCK FROM A BULLET IN THE HEART MUSCLE FOR 38 YEARS

1. Schmidt-Weyland in 1931 reported a case seen by him where electrocardiograms showed complete block. The pa-

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37. Levison, L. A.: Relation of Trauma to Cardiac Disease, Ann. Int. Med., 1:227-230, 1927.

38. Hay, J., and Jones, H. W.: Trauma as Cause of Auricular Fibrillation, Brit. M. J., 1:559-562, March 26, 1927.

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41. Kessler, H. H.: Accidental Injuries, 36, Lea and Febiger, Philadelphia, 1931.

42. Brahdy, L. and Kahn, S.: Trauma and Disease, Lea and Febiger, Philadelphia, 1937.

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44. Laubry, C., Block, S. and Meyer, J.: Bradycardia par dissociation auriculoventriculaire complete d'origine traumatique, Bull. et mem. Soc. med. d. Hop. de Paris, 45:1363-1372, Oct. 21, 1921.

45. Gallivardin, M. L.: Block total d'origine traumatique chez une jeune homme de 20 ans. Societe Medicale Des Hopitaux, Lyon med., 131:545-547, 1922.

46. Tuohy, F. L., and Bowman, P. G.: Trauma to Viscera from Nonpenetrating External Injuries, with Special Reference to Heart. Ann. Int. Med., 4:1373-1386, 1931.

47. Schilder, G.: Ueber traumatischen Herzblock, Med. Klinik, 48:1572, 1935.

48. Howatt, R. K.: Traumatic Rupture of Heart, Lancet, 1:1313-1314, June 19, 1920.

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50 Rosenson, W.: Heart Block in Child of 10 Years Following Trauma to Precordium, Am. J. Dis. Child. 2:594-596, Nov., 1924.

	Author	*Date*	*Type of Injury*	*Age*	*Sex*	*Stokes-Adams*
Complete AV block, nonpenetrating injury. Proved.	1. Laubry	1924	Carriage Shaft	21	F	0
	2. Gallivardin*	1922	Horse	19	M	0
	3. Coffen	1930	Fall	3	M	0
	4. Tuohy and Bowman	1930	Fall	70	M	0
	5. Schilder	1935	Kick by horse	63	M	0
	6. Warburg	1937	Fall	58	M	0
Complete AV block, nonpenetrating injury. No graphic records.	1. Howatt	1920	Crushing blow	60	M	
	2. Traubaud and Nuzum	1935	Camel	37	M	
	3. Kampmann**	1935	Auto crank Complete after injury —partial block	43	M	
Complete AV block, physical effort. Proved or not proved.	1. Tuohy and Bowman—Ecg.	1930	Lifting	43	M	?
	2. Painewsky—No ecg.		Lifting	?	M	18 years
Complete AV block, bullet wound. Proved.	1. Schmidt-Weyland		Bullet 35 years Block 1½ years	58	M	?
Partial AV block, nonpenetrating injury. Proved.	1. Rosenson		Fist blow	10	M	0
	2. Kampmann		Auto crank	43	M	0
	3. Warburg***		Fall	58	M	0

Table 1. Complete AV block from clinical history with and without Ekg; from nonpenetrating injury or effort.

tient had received a bullet wound and the bullet lodged in the heart for 38 years. From the history, complete block had been present for a year and a half.

From the above as shown in table 1, it is obvious that there are only six cases of auriculoventricular block caused by nonpenetrating chest injury which are proved by graphic records. In three others it can be assumed that complete heart block was present from the clinical records. There are two cases, in which heart block apparently resulted from severe physical effort and one from a bullet resting in the heart, making a total of twelve. (See Table 2.)

	Non-penetrating		*Penetrating Bullet*	*Severe Effort*	
	Proved	*Probable*	*Proved*	*Proved*	*Total*
			Stokes-Adams *35 yr.* *Block 1½ yr.*		
Complete AV block from injury....6		3	1	2	12
Partial AV block......3					3
					15

Table 2. Heart Block From Injury

There are three cases of partial block from nonpenetrating chest injury.

Duvoir et al[51] report a case of heart block (case 2 above) (Gallivardin's seen 20 years after he reported it), in which they naively state "this case is a complete auriculoventricular dissociation complicated by auricular fibrillation." Their published electrocardiograms show fibrillation only.

AURICULOVENTRICULAR HEART BLOCK IN CHILDREN, VARIOUS CAUSES

Since our patient was injured when three years old and apparently has had complete block since that time, we have reviewed the literature on the subject of heart block in childhood. Auriculoventricular block in children from causes other than trauma is not infrequent. One of the earliest contributions to this subject was made by Eyster and Middleton[††][52] in 1920 who reported a case of a child of two with acute nasal and tonsillar infection and 2:1 block. They collected 19 cases from the literature observed from 1896-1920, varying in age from fifteen months to fifteen years. We add 10 cases collected from the literature to this including our own.

In 1920 White et al[53] reported two cases from congenital lesions and two other congenital cases were reported by Rosenson[54] in 1922. Romberg and

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*Reported by Duvoir et al in 1937 as complete block of 20 years duration; they reported it as block "complicated by auricular fibrillation." Electrocardiograms show fibrillation and, of course, no typical auriculoventricular block. Gallivardin's original polygrams, on the other hand, show complete AV block.

**Kampmann's case had complete block after the injury (from the description but no electrocardiograms were made) and partial block when seen by him some years later.

*** Case No. 6 above.

††They give a table of twenty cases including theirs. In all but 6 the diagnosis was verified by electrocardiographic or graphic records; the others were inferred from slow pulse and syncopal attacks. They say it is less common and more frequently overlooked than in adults. The first case was reported by Schuster in 1896, probably due to rheumatic fever; the pulse was normal between attacks. A large number reported occurred during severe and usually fatal diptheria. They found two probable cases of heart block in eleven fatal cases of diphtheria, studied by Roywer in 1912 and quote Tanaka, 1912, who mentioned one case of Stokes-Adams syndrome in fifteen cases of diphtheria studied pathologically. The larger group, nine in number, are those in whom the cause of disturbed conduction is ascribed to congenital defect. A familial tendency was noted by Margino and by Fuller Judson and Norris. One case was ascribed to cardiac tumor and one occurred during whooping cough.

51. Duvoir, M., Pollet, L., Pautrat, J. and Mme. Neret-Cauchy, with collaboration of M. P. Pizon. Auriculoventriculaire dissociation traumatique d'une duree de 20 ans. Bull. et mem. Soc. med. Hopt. de Paris, 53:451-460, April, 1937.

52. Eyster, J. A. E. and Middlteon, W. S.: Auriculoventricular Heart Block in Children, Am. J. Dis. Child. 19:13, Feb., 1920.

53. White, P. D., Eustis, R. S. and Kerr, W. J.: Congenital Heart Block, Am. J. Dis. Child., 22:299, Sept., 1921.

54. Rosenson, W.: Heart Block in Infancy and Childhood, Arch. Pediat., 39:567-573, Sept., 1922.

White[55] in 1924 reported a female with defective interventricular septum (9 months old); they found 13 cases in the literature proved by graphic records. In 1924 Rosenson collected 36 cases of heart block in infancy and childhood in the literature and added the case of a girl of nineteen with congenital malformation.

La Conte[56] in 1924 reported a congenital case and McIntosh[57] in 1924 also reported a congenital case, no autopsy. Lorenz[58] in 1927 reported functional block. In reviewing the literature he said there were two main causes of heart block in children; diphtheria and congenital disease. He also said that 30 per cent of children show some disturbance in conduction after diphtheria.

So far as we can determine, traumatic block in children has been reported twice only, by Rosenson in 1924, a boy of ten with partial block, short duration; and by Coffen in 1930, a boy of ten, complete block, probable seven years duration.

PROGNOSIS OF COMPLETE AURICULOVENTRICULAR BLOCK

That people with complete heart block may live actively for long periods is well known. The outlook depends largely on the age of the patient and the degree of myocardial involvement. Willius in 1924 reported thirty-seven cases, noting that most deaths occurred between the fifth and seventh decades. The longest duration in his series was one of fifteen years.

Harris in 1932 analyzed forty-three cases, quoting Lewis who stated that heart block *per se* does not kill. He also quoted Sprague and White who noted that prognosis in people who are young is apt to be good. Harris in 1929 reported a case of twenty-eight years duration. Harris and White in 1931 reported 43 cases. Their oldest patient was seventy-eight; one patient had had block for twenty-four years who was seen at the age of twenty-four but probably developed block at the age of four from diphtheria. This patient had no symptoms. They found prognostic factors to be increased blood pressure, Stokes-Adams syndrome and arteriosclerosis. Smith in 1933 reported a case, aged forty-three, who had had heart block for thirty years, having developed it after diphtheria at the age of thirteen.

DISCUSSION

In our case it can be reasonably assumed that injury from a fall was followed by a lesion in the conducting pathway, resulting in auriculoventricular dissociation found by us seven years later when the patient was ten years old. In the last ten years we have examined him at least once a year. There have been no changes in the electrocardiograms in this time. He has grown and developed normally and is following normal physical activities.

This case is unique because; first, it is the only one in which auriculoventricular block from injury occurred in childhood that we have been able to find; second, there are only five other cases where auriculoventricular block resulted from nonpenetrating injury; third, it has persisted for seventeen years in our patient; fourth, there have been no evidences of heart failure or Stokes-Adams syndrome.

THROMBOANGIITIS OBLITERANS AND ACROSCLEROSIS*

CASE REPORT

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Occurrence of thromboangiitis obliterans and scleroderma, either of generalized or peripheral types, in the same patient is so rare as to constitute a medical curiosity. We have recently had opportunity to observe a patient in whom thromboangiitis obliterans and acrosclerosis, the peripheral type of scleroderma, existed simultaneously, and inasmuch as we were unable to find a report in the medical literature of a similar case, it was felt that a report of this case would be of interest.

Robinson[1] reported a case of arteriosclerosis obliterans associated with acrosclerosis. His patient suffered with intermittent claudication, and represented, as far as he could determine, the first report of acrosclerosis associated with this condition.

CASE REPORT

The patient, a 40-year-old man of Irish extraction, had an amputation of the right great toe at the age of eighteen following severe frostbite. He began the use of tobacco at the age of fifteen and ordinarily smoked ten to twenty cigarets daily. However, he discontinued smoking in April of 1939. In 1932, at the age of thirty-three, he noted for the first time pallor and cyanosis of the fingers of both hands upon exposure to cold. Shortly thereafter he developed an ulcer of the tip of the distal phalanx of the right second finger which healed within one month. From 1932 until 1936 he continued to have vasospastic symptoms involving all of the fingers of both hands, and recurrent superficial ulceration which involved the distal phalanges of all fingers at one time or another. About 1933 he noted the onset of numbness and cyanosis of both feet upon exposure to cold, these symptoms having persisted until he came under our observation.

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[55] Romberg, E., and White, P. D.: Congenital Heart Block, Report of New Case. Boston M. and S. J. 190:591-592, Apr., 1924.

[56] La Conte, : Complete Heart Block, Bull. de Soc. Med. Hop. de Paris, 48:469, April 4, 1924.

[57] McIntosh, R.: Congenital Heart Block, Am. J. Dis. Child, 34:965-968, Dec., 1927.

[58] Lorenz, E.: Ueber einem Fall von funktionellern partiellin Hertzblok. ztschr. f. Kinderh., 43:552-554,, 1927.

*From McKay Memorial Research Hospital.

[1] Robinson, S. S.: Scleroderma and Scalerodactylia Associated with Intermittant Claudication. Arch. Derm. & Syph. 36:1054-1057, Nov., 1937.

In 1939 he was examined at the Mayo Clinic by N. W. Barker, who kindly wrote to us of the examination as follows: "The general physical examination showed absence of pulsation in both ulnar arteries, and reduced pulsations in both posterior tibial and dorsalis pedis arteries. Allen's test was positive in both hands after occlusion of the radial arteries. An arteriogram of the left arm showed typical findings of thromboangiitis obliterans with occluded segments in many digital arteries and both ulnar arteries." At this time, apparently, there was no evidence of scleroderma. Bilateral cervicothoracic sympathectomy was performed on June 19, 1936 by J. G. Love of the Mayo Clinic.

Following the sympathectomy there was considerable improvement in the vasospastic symptoms of the fingers. However, in 1937 he did develop a superficial ulcer of the right fourth finger which healed within one month. In January of 1939 he developed superficial areas of ulceration over the external malleolus of both ankles and over the internal malleolus of the left ankle. The areas of ulceration over the right and left external malleoli healed within six and ten months respectively, whereas that over the left medial malleolus was present when the patient came under our observation.

In January of 1938 he developed slight swelling of both hands and forearms and both feet and legs along with a considerable amount of tenderness and pain in these regions. Also, at this time he developed a moderate degree of stiffness of the joints of the fingers, toes, ankles, knees and hips, and noted that the skin of the hands had become less pliable than had been the case previously. All of these symptoms improved until November of 1939 when he first came under our observation.

He had noted no difficulty in swallowing and no pigmentation of the skin. He had never had intermittent claudication, as far as could be determined. Excepting the symptoms described above, he had always considered his health to be excellent.

Physical examination revealed a man of asthenic habitus, weighing 135 pounds. The systolic blood pressure was 125 mm. of mercury and the diastolic 72 mm. Hoerner's syndrome was present bilaterally. The right great toe had been amputated previously. No pulsation of either ulnar artery at the wrist, digital arteries of the fingers, or right dorsalis pedis artery could be detected by palpation. The degree of pulsation of both posterior tibial arteries and left dorsalis pedis artery, although present, were considered to be decreased as compared with the normal. Otherwise, pulsations of the main arteries of the extremities were considered to be normal. Allen's test for occlusion of the ulnar artery was positive bilaterally.

At a room temperature of 25° C., the fingers and palms of both hands revealed a slight degree of rubor in dependent position. When the hands were warmed and elevated above the head there was a moderate degree of pallor apparent. However, color return to the fingers and palms was prompt, when the hands were again placed in the dependent position. In dependent position the skin of both feet at ordinary room temperature was cold and displayed blotchy cyanosis. When the feet were warmed and elevated, the soles revealed moderate degree of pallor. When lowered again the color return and venous filling were slightly delayed. There was a superficial ulcer 4 cm. in diameter of the medial malleolus of the left ankle.

The skin of the upper extremities, face and neck was quite dry. A marked degree of sclerosis was present in the skin of all fingers and, to a lesser extent, in that of the dorsum of hands, forearms, arms, face, neck and upper part of the chest, both feet, and lower third of the legs. The skin over the fingers and both malar regions particularly was tightly drawn and lacking in elasticity. There was moderate degree of limitation of motion of the interphalangeal joints of all fingers, metacarpophalangeal joints of the left hand, and slight flexion deformity of left elbow joint. There was moderate degree of thinning of the pulp and scarring at the ends of the distal phalanges of all fingers. Otherwise, the physical examination revealed nothing remarkable.

Results of laboratory examinations were as follows: Urinalysis revealed no abnormal findings. Erythrocytes numbered 4,510,000, leucocytes 8,800 per cubic milimeter of blood, and there were 12.6 grams of hemoglobin per 100 cc. Differential leucocyte count revealed no abnormalities. Morphologically the blood cells appeared normal. Sedimentation rate of blood was 18 mm. in thirty minutes and 50 mm. in one hour. Blood urea nitrogen measured 15.2 mg. per cent, blood sugar 87 mg. and serum calcium 10 mg. Roentgenograms of the legs revealed no calcification of arteries and were otherwise normal. Roentgenographic study of the right hand revealed osteoporosis of all bones of the hand, and arthritic changes of interphalangeal joints, resembling the rheumatoid or atrophic type.

Biopsy was performed, skin tissue having been removed under novocain analgesia from the dorsal aspect of the proximal phalanx of left index finger. The pathologic report furnished us by Dr. C. P. Larson of Tacoma was as follows: "The histologic picture of this piece of skin is quite characteristic of scleroderma. These features are: epidermal atrophy, thickening of cutis with collagenous fiber increase, periarteritis with narrowing of the lumina and perivascular lymphocytic exudate" (fig. 1). A section of skin was examined also by Dr. Hamilton Montgomery of the Mayo Clinic, who stated that the pathologic changes observed were entirely consistent with a diagnosis of scleroderma.

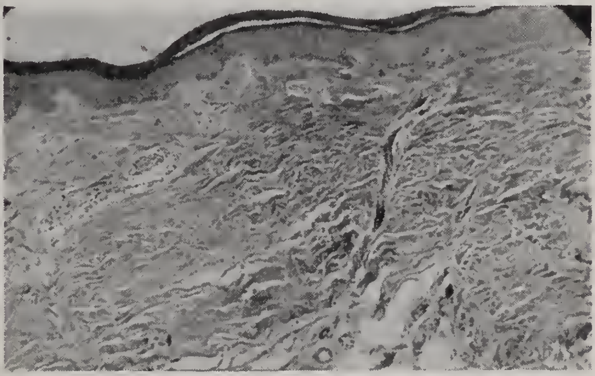

Fig. 1. Photomicrograph of skin biopsy specimen from finger of patient with thromboangiitis obliterans and acrosclerosis.

The patient was observed over a period of approximately six months. The ulcerated area of the left ankle healed within ten days. However, there was no marked change in the condition of the skin during the period of observation.

COMMENT

It is an interesting fact that this patient developed acrosclerosis following cervicothoracic sympathectomy, a procedure not infrequently used for the treatment of this condition. Perhaps preexistence of sympathetic denervation was a fortuitous circumstance for the patient insofar as it might have inhibited the progress of the acrosclerosis. However, in this connection, it might be pointed out that there is no evidence which establishes as a fact the possibility that sympathectomy influences the fundamental causative factor or factors of scleroderma.

This statement, naturally, is closely interrelated with our lack of knowledge concerning the etiology of scleroderma. Furthermore, it has never been established that vasospastic phenomena, so commonly observed in association with acrosclerosis, are the result of quantitatively or qualitatively abnormal sympathetic nervous impulses. On the contrary, investigations of Lewis and Landis[2] indicate that these vasospastic phenomena result from hypersensitivity to cold localized in the vessels themselves. The occurrence of acrosclerosis in association with vasospastic phenomena in areas previously subjected to sympathetic denervation constitutes evidence against the idea that either acrosclerosis itself or vasospastic phenomena associated with this condition is caused by quantitatively or qualitatively abnormal sympathetic nervous impulses. It is probable that the concomitant presence of thromboangiitis obliterans and acrosclerosis in this patient represents a coincidence.

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[2] Lewis, T. and Landis, E. M.: Further Observations Upon a Variety of Raynaud's Disease, with Special Reference to Arteriolar Defects and to Scleroderma. Heart. 15: 329-350, July, 1931.

TREATMENT OF GONORRHEA IN THE MALE WITH SULFATHIAZOLE*

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Sulfathiazole is a valuable adjunct to the treatment of gonorrhea in the male patient. A report of thirty-one cases, many of which were failures with sulfanilamide, in which sulfathiazole therapy has been employed, is herewith presented. The results are both satisfactory and conclusive.

Most authorities agree that sulfanilamide tends to shorten the duration of gonorrhea in the male, and prevents some of the complications. It is also fairly well agreed that chemotherapy should be used in conjunction with local treatment. However, sulfanilamide is by no means a cure-all. An analysis of one hundred cases of gonorrhea receiving sulfanilamide plus local therapy, and one hundred treated by local therapy alone was made one year ago in the Urology Department, Out-Patient Clinic of University of Oregon Medical School. The results indicate that only twenty to thirty per cent of the cases were benefited by giving sulfanilamide as an adjunct to local treatment (figs. 1 and 2).

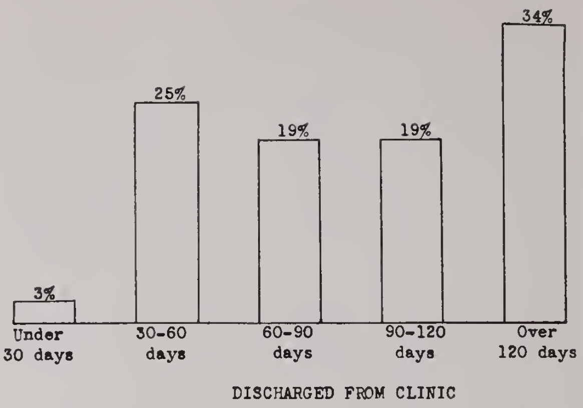

Fig. 1 Analysis of 100 cases of Gonorrhea treated by local therapy.

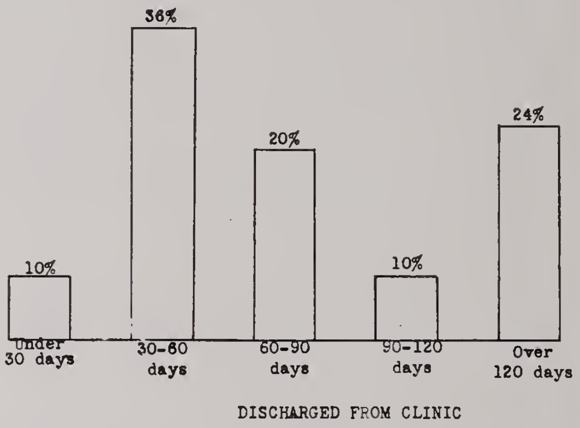

Fig. 2. Analysis of 100 cases of gonorrhea treated by sulfanilamide plus local therapy.

Sulfathiazole has been administered to thirty-one patients with gonorrhea, both private and clinic, mainly acute, anterior urethritis (table 1). Twenty-four cases had previously received sulfanilamide from three to one hundred eight days with no effect. Seven cases have received sulfathiazole only. All of the patients previously receiving sulfanilamide presented a profuse uretheral discharge at the time of sulfathiazole administration. In the majority of instances the urethral discharge ceased in one to three days, the longest being seven days, and the urine cleared (no shreds) in one to seventeen days. Those cases which received sulfanilamide in adequate dosage, and for a period of ten days or more, or sixty-one and one-third per cent of the total number, can be classed as definite failures with that drug. We have noticed that there have been fewer complications of acute anterior urethritis with the use of sulfanilamide plus local therapy than when local treatment was our only means of treating the disease. Although this series of cases is

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*From Department of Urology, University of Oregon Medical School.

Name	Diagnosis	Days sulfanilamide had been given	Started on sulfathiazole from first	Discharge present at start of sulfathiazole	Length in days for discharge to cease after sulfathiazole started	Length in days for urine to clear (no shreds) after sulfathiazole started	Cured	Recurrences	Reactions	Addl. information
P.A.A.	Acute GC	21	no	yes	1	3	yes	no	none	
J.H.	Acute GC	4	no	yes	1	1	yes	no	none	
L.H.	Acute GC	35	no	yes	1	1	yes	no	none	
C.F.	Acute GC	21	no	yes	1	3	yes	no	none	
D.I.	Acute GC	7	no	yes	1	2	yes	no	none	
O.J.	Acute GC	7	no	no	—	14	yes	no	none	
W.L.	Acute GC	—	yes	yes	3	6	yes	no	none	
J.M.	Acute GC	—	yes	yes	3	9	yes	no	none	
T.O.	Acute GC Prostatitis	—	yes	yes	2	7	yes	no	none	
W.O.	Periurethral Abscess GC	—	yes	no	—	4	yes	no	none	
A.O.	Acute GC	7	no	yes	6	10	yes	no	none	
V.P.	Acute GC	63	no	yes	2	14	yes	no	none	
V.R.	Acute GC	—	yes	yes	2	6	yes	no	none	
M.S.	Acute GC	18	no	yes	2	2	yes	no	none	
E.S.	Acute GC	14	no	yes	2	2	yes	no	none	
S.T.	Acute GC	—	yes	yes	2	8	yes	no	none	
W.W.	Acute GC Abscess frenem	18	no	no	—	5	yes	no	none	
D.J.	Acute GC	3	no	yes	1	1	yes	no	none	
V.B.	Acute GC	42	no	yes	5	17	yes	no	none	
A.V.	Acute GC	65	no	yes	2	14	yes	no	none	Pt. developed epididymitis and acute prostatitis while on sulfanilamide
J.H.	Acute GC	60	no	yes	7	10	yes	no	none	
M.M.	Acute GC	11	no	yes	2	9	yes	no	none	Epididymitis developed while on sulfanilamide
O.B.	Acute GC	48	no	yes	2	5	yes	no	none	Had stricture from prev. GC
M.S.	Acute GC	49	no	yes	2	14	yes	no	none	
J.J.	Acute GC	108	no	no	—	3	yes	no	none	Developed epididymitis and prostatitis while on sulfanilamide. Drug given with rest periods
R.S.	Acute GC	55	no	yes	1	14	yes	no	none	
T.H.	Acute GC	14	no	yes	1	2	yes	no	none	
G.B.	Acute GC	24	no	yes	2	8	yes	no	none	
W.Y.	Acute GC	65	no	yes	4	11	yes	no	none	
H.W.	Acute GC	12	no	yes	1	6	yes	no	none	
A.N.	Acute GC	—	yes	yes	2	5	yes	no	none	

Table 1 lists 31 patients with acute, anterior urethritis, treated with sulfathiazole plus local therapy.

small, we have noticed no complications so far, when using sulfathiazole.

Our plan of treatment, which combines local treatment along with chemotherapy, is as follows: On entrance, two urethral smears are made, and both stained by the Gram method. One is examined for Gram-negative intracellular organisms, and the other kept for future reference. When the organisms are found, a two glass test is made. If the second glass is clear, or clears with acid, a warm acriflavine solution of 1-4000 dilution is used to irrigate the anterior urethra.

The patient is then started on sulfathiazole in the following dosages: gram 1 every six hours day and night for the first two days; gram ½ every four hours day and night for the third and fourth days. From then on, gram ½ is given every six hours day and night. Privately, the patients are given daily irrigations in the beginning, and in the clinic all treatment is given twice weekly. After five or six acriflavine irrigations, potassium permanganate is substituted for irrigation twice weekly until ready for the test of cure.

Sulfathiazole is discontinued and the test of cure begun when both glasses are clear and free of shreds. However, if one or two shreds are found in the urine after the patient has received an adequate total dosage of the drug and sufficient irrigations, the shreds are stained by the Gram method. If no organisms are found and very few pus cells, it is safe to begin the test of cure. On the other hand, if Gram-negative intracellular diplococci are present, as is frequently the case, the drug and the mild irrigations are resumed. So far, the average total dosage is thirty-five to fifty grams of sulfathiazole which is considerably less than the total dose of sulfanilamide.

In the test of cure the anterior urethra is irrigated with silver nitrate, 1-10,000 dilution, and the patient given a slide to collect any discharge. When no reaction occurs, and the urine remains clear, a 1-8,000 silver nitrate irrigation is given at the next visit with the same instructions; similarly, this is followed by a 1-6,000 silver nitrate irrigation. Providing the urine remains clear and no discharge is present, the prostate is then massaged and the fluid examined microscopically for the number of pus cells. This is followed by a deep urethral irrigation of silver nitrate or permanganate. When pus cells are found, the prostate is massaged biweekly, followed by deep urethral irrigations until no pus cells are present. It is then time to pass sounds. Should no reaction occur one to four days after sounding, the patient is discharged as cured, and instructed to return in one month for a check on the urine.

The clear urine (which shows no shreds), therefore, provides a safe criterion for discontinuing the drug and beginning the test of cure. Apparently, sulfathiazole will be the choice of drug therapy to assist local treatment in the cure of gonorrhea in the male. To date, we have had no cases, complicated or uncomplicated, which have failed to respond in a short time to sulfathiazole.

CONCLUSIONS

1. Thirty-one cases of male gonorrhea have been successfully treated (100 per cent) by sulfathiazole plus local therapy.
2. Sulfathiazole is indicated in sulfanilamide-resistant cases.
3. Sulfathiazole shortens the course of gonorrhea in the male more than any other previous treatment.
4. No complications have been observed during the administration of sulfathiazole.
5. No untoward reactions from sulfathiazole have been noted.

CHRONIC PYELONEPHRITIS*

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Advances in knowledge of causes of failure of renal function have given a new realization of the importance of chronic pyelonephritis. The relative feeling of futility which the physician feels, when dealing with patients whose renal function is impaired by glomerular nephritis, nephrosclerosis, and other types of medical renal disease, serves to emphasize the value of the knowledge that in pyelonephritis we have an important cause of death, due to failure of renal function which may be influenced favorably if managed properly in its incipient stage. It has been demonstrated that renal failure due to chronic pyelonephritis is more frequent than failure due to chronic glomerular nephritis.

Kidney complications arising during pregnancy, which are directly due to chronic pyelonephritis, are receiving more attention. In this connection it should be emphasized that chronic infections of the urinary tract in small girls produce changes which amount to real hazards during pregnancies later in life. The demonstration of some cases of hypertension, which are the direct outcome of chronic suppurative renal disease, adds another reason for real effort in the production of real cures in early stage of the disease.

In other ways our conception of chronic suppurative infections of the urinary tract have changed and we have a good knowledge of what happens to the kidney parenchyma, kidney pelves, ureters, bladder, urethra, and in male patients the prostate and vesicals. It has been well demonstrated that most acute and chronic suppurative infections of the urinary tract actually involve the entire urinary tract. In other words, most patients with cystitis also have an active process in the renal parenchyma, kidney pelves and ureters. as well as in the bladder and urethra. Attention is focused on the bladder on account of the disturbance of urination as a chief complaint without a great deal of fever or pain to indicate involvement of the upper urinary tract.

Pyelitis, while a pathologic misnomer, is part of our medical vocabulary. However, it has been amply demonstrated that inflammation of the kidney pelvis without involvement of the renal secreting substance probably never occurs. Thus it follows that we should consider virtually all acute urinary tract infections as acute pyelonephritis, and chronic infections as chronic pyelonephritis, not forgetting that the pelves, ureters, bladder, etc. are usually also involved. Equally important is the fact that very few of the patients with frequently or infrequently recurring pyelitis or cystitis are actually having recurrences, but they were never cured. Their so-called recurrences are really exacerbations.

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*Read before a meeting of Pierce County Medical Society, Tacoma, Wash., Nov. 12, 1940.

Tissue changes in chronic suppurative disease of the urinary tract are no different from those in other organs. They proceed to destruction of vital tissue and scar formation. Thus in the kidney substance we have a rather typical and irreversible picture in the course of time. Equally important are the changes in the pelves, ureters, and bladder, with, again, irreversible scarring, interference with motor function, and chronic, sometimes incurable, sepsis deep in the walls of these hollow organs. In addition, such chronic infection with urea-splitting organisms is an important factor in calculus disease.

While we do have effective therapy, it can easily be seen that cures are going to be much more frequent early in the process. Proper management of the condition consists of the following: first, accurate diagnosis; second, proper selection of medication and other measures; third, demonstration of real cure before dismissal of the patient. With the great advances in the chemotherapy of these infections of the urinary tract, a knowledge of the offending organism is really necessary in order to select the medication most likely to prove effective. This is not difficult to do. Cultures are not usually required. Examination of a stained urinary sediment will ordinarily be adequate after staining by Gram's method.

Incidentally, this is important, not only for the proper selection of a drug, but to avoid such errors as treating tuberculosis with a sulfonamide derivative simply because the patient has pus in the urine. The proper collection of a specimen is vital. Carefully collected second glasses of voided urine in male patients are adequate. With female patients, the second portion of a catheterized specimen is absolutely necessary. The glassware need only be clean, if the sediment is to be examined immediately. It need be sterile only when cultures are to be made. Such specimens are preferred for examination of the wet sediment also.

Studies of the mechanics of the urinary tract are indicated in patients who are not cured in a few weeks, and in others in whom abnormalities are suspected when the patient is first seen. It must be recognized that real cures are almost never achieved in any patient who has residual urine above obstruction. A man with prostatic obstruction and residual urine in the bladder can rarely be cured of infection until he is able to empty his bladder completely. This is equally true of women with residual bladder urine caused by cystocele, urethral stricture or other mechanical abnormality. Incidentally, such pathology in women is frequently overlooked.

Interferences with the motor function of the upper urinary tract are equally effective in production of small or large amounts of residual urine in the parts of the urinary tract above the obstruction, and thus in rendering ineffective our chemotherapy. When one appreciates that organisms responsible for pyelonephritis will all grow freely in the urine, the importance of this matter of residual urine becomes more apparent. If one-half ounce of urine containing bacteria remains in the bladder after urination, this alone is enough to render futile our attempts to cure the patient's infection. The same thing is true of quite small amounts of residual urine containing bacteria which are situated above partial obstructions in the upper urinary tract.

While some of these structural defects in the upper urinary tract are primary lesions, in many instances they are products of the infection, and indicate that we should emphasize the importance of complete cure as early in the disease as possible. The study of the urinary tract by pyelography gives us information along this line, and should be done in all patients who do not respond promptly to medical therapy.

The mainstay of drug therapy is the sulfonamide drugs. For the gram-negative bacillary infections sulfanilamide and sulfathiazole are effective. Introduction of sulfathiazole has given us a drug which is effective in some varieties of urosepsis in which sulfanilamide was ineffective, namely, infection with staphylococci and streptococcus fecalis, and also it is more effective in proteus infections. The dosage is moderate and in general more cures can be obtained by the use of under 45 grains daily over a period of two to four weeks than by larger dosages over a shorter period of time. With sulfathiazole it is probably better practice to administer the drug for shorter periods of time, and repeat the course after a rest period.

We must not forget other agents, though less effective, which we used before sulfanilamide appeared. Patients with certain gram-negative bacillary infections can still be effectively treated with ammonium chloride or nitrate, methenamine and the mandelates. These drugs are important also for the patients who are not cured by a reasonable course of a sulfonamide derivative and those who are unable to tolerate these drugs. Treatment of structural deformities of the urinary tract will depend on the nature of the abnormality.

I wish to lay considerable emphasis on the matter of proof of cure before dismissal of the patient. This can seldom be done with a single examination. The longer the duration of the infection, the more observations are necessary before dismissal of the patient. Symptoms must be absent. The wet sediment must be free of pus. The stained sediment or culture must demonstrate absence of bacteria. Examinations which do not reveal bacteria while the patient is receiving a urinary antiseptic are not to be relied upon. Continued absence of the offending organism after all treatment has been stopped constitutes the real proof of cure.

INCIDENCE OF EPIDIDYMITIS AND VARICOCELE IN CASES OF IMPOTENCE

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In a paper by Hagner[1] the following statement appears: "In my experience I have never seen a patient who was sterile from gonorrheal epididymitis who had impotence." A statement like this coming from so eminent an authority is very important as bearing on the Steinach operation for rejuvenation. As is well known, this operation consists of tying off one or both vasa, and the result is supposed to be that a constant stream of testicular hormone is being sent into the blood, which is supposed to have the effect of rejuvenating the person and especially improving his sexual power.

As can readily be seen, occlusion of one or both epididymides as a result of an old epididymitis, practically does pathologically what the Steinach operation does artificially. So it was of extreme interest to me to note that Dr. Hagner's experience with cases of epididymitis did not show impotence among such cases.

I have, therefore, gone over several hundred consecutive cases of impotence and have found signs of an old epididymitis in 11 per cent of them. As a contrast I have tried to find out whether this percentage was more or less than would be found in the general run of adult males. Unfortunately, no statistics on this subject could be obtained anywhere. It would obviously be useless to examine all males in a genitourinary clinic for this purpose, as these are in a large measure venereal cases and would give no idea of what the condition is in the general run of humanity.

I have therefore consulted and written to the draft board of the Great War, but it seems that they did not note the condition of the epididymides in the drafted men. This was natural enough as the occlusion of one or both epididymides had no bearing whatsoever on the physical condition of a drafted man, or would in any way make him unfit for the army. I am referring to the old nodules or thickenings found years after an acute epididymitis and not to the acute epididymitis following in the wake of a recent gonorrhea. I have also written to the Life Extension Institute, but was informed that the particular condition is not coded in their statistics.

I have also tried to come to a conclusion by reasoning out what percentage of cases of gonorrhea are complicated with epididymitis and also what is the percentage of gonorrhea among the adult male population, and by this method tried to compute the percentage of epididymitis in the general run of adult males. I soon found, however, that no such calculation or deduction could be made for the simple reason that various authorities, stating the percentage of epididymitis following a gonorrhea, vary within such very wide limits that not even a guess could be made. I doubt from general observations that, if we were to take several hundred men at random, we would find as many as 11 per cent, that is, about one in every nine suffering from an old epididymitis.

I have recently thought of another method of obtaining an approximate picture of the presence of old epididymitis in the general run of adult males. Careful statistics that I collected many years ago in the gynecologic clinic at Mt. Sinai Hospital showed that, of 1000 consecutive cases of women coming for various gynecologic conditions, exactly 7 per cent came expressly for relief of sterility.

This, of course, does not state the number of sterile cases, as histories of many other cases showed absence of children, either on purpose or otherwise, but it only showed the percentage that came for relief of sterility. General statistics from a computation of various authors, show that about 10 per cent of all marriages are sterile. Again, my own statistics, based on a careful examination of both husband and wife in many hundred cases of sterility, showed that in almost 60 per cent of married couples sterility was due to the male. My statistics gave the male a much greater responsibility as to the cause of sterility than most other authors at the time.

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[1] Hagner, F. R.: Sterility in the Male with Remarks on Operative Experience. J. Urology. 13:377-382, March, 1925.

If, therefore, 10 per cent of all marriages are sterile and of this number 60 per cent of the sterility is due to the male, we can roughly state that about 6 per cent of our adult males are sterile, due in the vast majority of cases to a previous epididymitis. Not every case of epididymitis results in an occlusion of the epididymides, but this defect is more than offset by the fact that there are many cases of azoospermia in patients who never had an epididymitis or even a gonorrhea.

Azoospermia, due to endocrine disturbances of the testicles, tuberculous or syphilitic testicles or their atrophy due to a severe attack of mumps or other causes, is not at all uncommon. So that, if I say that in the general run of male adults the incidence of a previous epididymitis is about 6 per cent, I believe I am rather overestimating the percentage of epididymitis than the reverse. So that even at this figure, my statistics in many hundreds of cases show that the incidence of epididymitis is almost twice as common in impotence cases as in the general run of mankind. This is the direct reverse of Hagner's statement. He limits his statement only to those cases in which sterility was due to a previous epididymitis, in other words, only those cases in which complete occlusion occurred. I have, therefore, considered the subject from every angle and have come to the conclusion that epididymitis is about twice as common in impotence cases as in the general run of mankind.

In my observations of the Steinach operation in young people, not only those cases operated on by me but also those by my most intimate colleagues, I have very rarely noted any improvement in the sexual function after this procedure. It is of interest also to note that Benjamin, who is the foremost advocate of the Steinach operation in this country, says it is generally useless in impotence of young folks, while it is often beneficial in older men. Theoretically, however, if there were any real virtue in this operation as regards impotence, it ought to work better in younger than in older people. I would say, therefore, that it is not justifiable to make a young man sterile, even on one side which this operation does, in the hope of curing his impotence; and, second, that occlusion of one or both epididymides, whether the outcome of a pathologic process or deliberately by operation, has no beneficial effect in impotence.

Coming now to the incidence of varicocele in impotence cases, my own statistics showed, in several hundred cases of impotence taken in regular order, the presence of undoubted varicocele in 13 per cent of the cases. Comparing this with the presence of varicocele in the general run of humanity, we find in an article by Love and Davenport[2] that the incidence of varicocele was 3.25 per thousand, or less than one-third of one per cent. Talmey[3] quotes Curling that in 166,317 recruits examined in Great Britain during ten years the incidence of varicocele was 23.5 per thousand or a little over 2 per cent and the same author gives the statistics of 2,166,470 in France showing the presence of varicocele to be 10.05 per thousand or a little over 1 per cent. Bennett[4] gives a somewhat higher proportion, stating that between 5 and 6 per cent of adult males have varicocele. So we see that varicocele is at least twice as frequent in impotence cases as in the general run of mankind.

Bennett states that in two-thirds of his varicocele cases there was clear evidence of want of proper development of the testicle on that side. My own observations do not agree with this statement. He says that, on account of the presence of varicocele, the testicles could not attain a perfect state of development at the time of puberty. Here, again, my own observations do not agree with his.

Thus we are forced to the conclusion that, in direct opposition to most medical authorities, varicocele must stand in some causal relationship to impotence. What this relationship is it is hard to decide. Although not strictly in accord with either anatomy or physiology, we might possibly think that, of the blood sent to the sexual organs during coitus for the purpose of maintaining a firm erection of the penis, a large portion is diverted toward filling the greatly distended veins making the varicocele, thus preventing retention of sufficient blood in the penis for the necessary time of coitus. This would be in line with the operation of tying off the dorsal vein of the penis in cases of impotence for the purpose of preventing the too rapid outflow of blood from it.

DISCUSSION

The relationship of a previous epididymitis to impotence is discussed and it is shown that such a condition has no beneficial influence on the condition. It is also shown that impotence cases include a much larger percentage of varicocele than can be found in the general run of mankind, and that possibly variocele has some causal relationship to impotence.

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[2] Love, Gallatin, A. and Davenport, C. B.: Defects Found in Drafted Men. Wash. Gov. Print. Off., 1919.

[3] Talmey, B. S.: Contribution to Study of Etiology of Varicocele. New York M. J. 60:40-43, July 14, 1894.

[4] Bennett, W. H.: On Varicocele, Longmans, Green & Co. London, 1891.

SERUM REACTIONS*

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It is well known that administration of animal serum may result in one of several types of reaction. It is the purpose of this paper to outline the types of serum reaction which may be seen and to discuss their prevention and treatment.

In general, we may say that there are three types of reactions which may follow administration of foreign serum. The first of these, and the one which has been most publicized, is the immediate, violent type of reaction frequently named primary, natural or atopic serum shock. This is the type in which death may occur in a very short time. It is not a common condition. Parks has estimated that it occurs only once in about every 70,000 individuals given serum. It occurs only in persons who have a natural allergy to the protein in the serum. These people usually have a personal or family history of allergy, and very frequently have noticed that they themselves develop asthma, rhinitis or cough on coming near horses. They are inherently sensitive to horse dander. The reaction is probably a true antigen-antibody reaction. It is much feared by the profession and the laity alike, and properly so. When it does occur, it is sometimes impossible to save life.

The symptoms of primary shock usually appear soon after administration of the serum, sometimes in a few minutes. In the case of intravenous injection, the reaction may begin almost immediately. Most of these individuals complain first of local itching and rapidly developing edema at the site of the injection. General urticaria may develop very soon. Cough and a sense of chest constriction frequently appear. Marked asthma may develop. Some persons show almost immediate swelling of the skin of the face and extremities. Frequently there is great apprehension. Choking sensations, dyspnea and cyanosis, and a rapid, thready pulse may occur. One patient who had been through this terrible experience stated that he had great pain in the chest and an overwhelming sense of impending death. Collapse and death may ensue in a short time. Those who survive may develop symptoms of serum sickness.

According to the "Therapy of (Horse) Serum Reactions" (The Therapy of the Cook County Hospital), adrenalin should be given by the intramuscular route (1 cc.) or even by the intravenous route (0.2 to 0.3 cc. diluted) in cases of extreme emergency. At the first sign of reaction a small amount of adrenalin will help these people very much. If the patient survives the first 15 or 20 minutes, chances of recovery increase with each passing moment. Some authors recommend the use of caffeine-sodium benzoate, morphine and other measures to combat shock. Ephedrine sulphate has been used after the immediate severe reaction is over. Calcium gluconate has also been given. Calcium lactate given orally, ephedrine and adrenalin have all been used in order to prevent this type of reaction but there is considerable question if they are ever of much value.

It is easier to prevent these reactions than it is to treat them after they have occurred. Prevention consists of proper skin and ophthalmic testing and proper history taking. History alone will frequently cause a physician to suspect that his patient is likely to develop a reaction. The most significant history is one of sensitivity to horse dander but a history of previous serum reaction, or of a strong personal or family allergy, should be enough to make one very cautious about administration of serum.

It is doubtful if a person with a history of sensitivity to horse dander, and with or without positive skin and eye reactions, should ever be given horse serum. If there is any reason to suspect serum reaction, it is wise to give the serum in an extremity where a tourniquet could be applied, if signs of a reaction develop.

It is difficult to explain to the person or his surviving relatives why the reaction occurred and it is generally wiser not to give serum when there is likelihood of it.

SERUM SICKNESS

Serum sickness differs from genuine allergic shock in that it appears much later and it is probably not an antigen-antibody reaction at all. It is likely to occur sometime between the sixth and twelfth day after administration of serum. There is no way of predicting its occurrence. We do know it is definitely related to the amount of serum given, the route of administration and the type of serum used.

Tuft[1] has stated that the type of bacteria used for the production of serum seems to influence the incidence of serum sickness. Serums prepared against streptococci and pneumococci more frequently caused serum sickness than did those prepared against other organisms.

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[1] Tuft, L.: Serum Allergy, Journal-Lancet, 57:93-97, March, 1937

Coca, Deibert and Menger[2] have stated that serum sickness would probably occur in 90 per cent of normal people, if large enough doses of serum were used.

Symptoms usually begin with tenderness, swelling and itching at the original site of injection. These people sometimes develop general malaise, headache, and some low-grade fever before they show any specific symptoms or signs. Many of them have been called influenza. Most of them eventually develop urticaria, either locally or generally, which is accompanied by joint pains and generalized lymphadenopathy. Occasionally a patient will show some periarticular swelling and there may be even a slight joint effusion but usually there is no local sign of joint inflammation. Patients sometimes show a fever of as much as 104°; there may be severe headache accompanied by vomiting and occasionally there may be neurologic symptoms as well. These will be discussed at a later date. Ordinarily symptoms subside even though untreated within four to five days and the patient recovers without sequelae. Relapses are rare but may occur.

Diagnosis depends largely upon the history of previous administration of serum plus the signs and symptoms. It is sometimes difficult to differentiate this condition from some others but usually there is not much question about the diagnosis. It is almost never fatal; complications, particularly neurologic, may arise and they are sometimes very serious.

Treatment. Attempts at prevention have not been successful. Use of calcium, ephedrine and other drugs for prevention of the disease are of questionable value.

These patients are usually miserable and are better off if kept in bed. Adrenalin hydrochloride given subcutaneously in moderate doses (0.4 to 0.6 cc.) will relieve the urticaria for a time. It is sometimes wise to give these persons ephedrine sulphate, since they seem to get some relief from it. Three-eighths of a grain every three to four hours may prove helpful. A great variety of analgesics have been used to control joint pains. Aspirin alone or an aspirin-codeine mixture is frequently adequate. Soda baths or calamine lotion with phenol have also been used extensively in control of skin itching. Calcium lactate by mouth in moderate doses has been widely used. Results from it are somewhat variable. These patients need considerable reassurance. It is difficult for them to understand the nature of the reaction and some are very apprehensive concerning it. It is advisable to caution these persons against further administration of serum. Severe reactions have sometimes followed a second administration. They should be thoroughly acquainted with the reaction and need to understand that they must not allow serum to be given to them again unless the physician is aware that they have had previous reactions.

ACCELERATED SERUM SICKNESS

This condition, which in many respects is similar to the ordinary variety of serum sickness, occurs mainly in persons who have had previous serum injection. It varies from ordinary serum sickness in two respects. In the first place, the period between administration and development of symptoms is much shorter, sometimes being less than a day. Many of them will develop symptoms within a few hours. In the second place, the symptoms are liable to be much more severe and alarming than in the case of ordinary serum sickness. Usually there is a severe urticaria and sometimes generalized erythema. Occasionally they may show marked edema of the face. There may be sneezing, coryza and shortness of breath. Severe asthma may occur. Infrequently such patients will develop syncope.

Fatalities have resulted, but they are extremely uncommon. Rarely, hematuria may be seen. Hemorrhage from mucous membranes has been reported, and there may be a severe purpuric eruption. It is wise to remember that this type of reaction, sometimes called immediate serum reaction of the secondary type, occurs only in those who have received horse serum. It is usually anticipated by means of skin tests, since these people ordinarily show skin sensitivity. The therapy is the same as in ordinary serum disease but must be actively pursued. Ten per cent calcium gluconate given intravenously has been used.

SERUM DISEASES OF NERVOUS SYSTEM

Kraus and Chaney,[3] Bennett[4] and Coons and Kirk[5] have discussed involvement of the nervous system in serum disease. According to Kraus and Chaney, central nervous system involvement may occur upon the administration of a great variety of serums. These need not necessarily be prophylactic or therapeutic serums since the condition has developed when normal serums have been given. This complication usually appears in males over twenty-one and the degree of involvement varies greatly. Nervous system involvement may occur at any stage of serum sickness. It is probable that headache, nausea and vomiting, which so frequently occur with serum disease, are symptoms of some neurologic involvement.

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[2] Coca, A. F., Deibert, O. and Menger, E. F.: Studies in Specific Hypersensitiveness. J. Immunology, 7:201-217, March, 1922.

[3] Kraus, W. M. and Chaney, L. B.: Serum Disease of Nervous System, Arch. Neurol. & Psychiat., 37:1035-1047, May, 1937.

[4] Bennett, A. E.: Horse Serum Neuritis. J.A.M.A., 112: 590-596, Feb. 18, 1939.

[5] Coons, J. J. and Kirk, G. D.: Serum Disease with Special Reference to Polyneuritis. Ohio State M. J., 35:390-392, April, 1939.

Kraus and Chaney describe four syndromes. These are: (1) cerebral, characterized by choked disk, meningeal irritation, positive Kernig, and sometimes aphasia, alexia, hemianopia or even hemiplegia; in these cases spinal fluid pressure is much increased, with some cellular reaction. There may be associated paralysis of the cranial nerves. The other syndromes, (2) spinal, (3) radicular and (4) neural, sometimes occur in combination but may occur singly. Most characteristic picture is involvement of the Erb-Duchenne type. There is usually pain in the shoulder region radiating down into the chest wall, followed by weakness of shoulder muscles and sometimes going eventually into complete paralysis. Atrophy frequently occurs; it may be progressive and severe. In from three to eighteen months there will be improvement in most cases, frequently leading to complete cure. There may be slight residual weakness and atrophy of some of the affected muscles. Residual weakness and atrophy seem to be more frequent in the deltoid muscles than in any other. In the neural type the ulnar or median nerve may be involved. Optic neuritis has been described.

Bennett states that, in a large percentage of the cases, nerves of the fifth and sixth cervical roots are involved. He describes the symptoms as being severe neuritic pains about the neck and shoulders or the arms and legs with flaccid paralysis developing within a few hours to a day followed by gradual atrophy, muscle tenderness and hyperesthesia for several weeks. Motor paralysis with atrophy, sensory loss and reduced, or absent reflexes may sometimes complete the picture.

Bennett also discusses in detail the medicolegal aspects of involvement of the central nervous system. These are particularly important since the neurologic involvement is a direct result of treatment. Treatment of this condition, as described by these authors, consists of use of atropine and epinephrine, dehydration by restriction of fluids and by spinal tap. Massage and electrical therapy are generally recommended. Bennett believes that repeated injection of adrenalin probably would lessen nerve damage and recommends splinting and complete rest of the involved parts during the acute stage. Details of treatment are to be found in his papers.

DISCUSSION

From the data given here it should be plain that administration of serum may be accompanied by severe reactions. Serums should be given only when especially indicated and when the history and results of tests on the patient indicate that it is probably safe. Routine administration of serum in every injury, or as a prophylactic measure in every exposed case, is not to be recommended. When properly used, it is of extreme importance and may save a great deal of illness and sometimes life itself, but it must not be regarded as a completely innocuous agent.

REVIEW OF PNEUMOCOCCIC MENINGITIS*

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Prior to the use of various sulfanilamide drugs, the diagnosis of pneumococcic meningitis was synonymous to a death pronouncement. Very few are the recorded recoveries from proven cases of pneumococcic meningitis before 1938. Since Whitby[1] suggested the use of sulfapyridine in pneumococcic infections, there has been an evergrowing literature reporting cures. Particularly in England, the use of sulfapyridine has met with great success which has since been borne out by American doctors. Most authorities are in agreement that the patient now has an approximately 50 per cent chance for recovery.

Prevalence of pneumococcic meningitis is not to be minimized. In the English literature from 1938 through 1940 there is an abundance of cases recorded. In King County Hospital, out of 36,968 total admissions, there were forty-eight cases of meningitis, of which four were pneumococcic. In other words, 8.3 per cent of all meningitides admitted were pneumococcic in origin.

To treat purulent meningitis as a meningococcic meningitis until proven otherwise is no longer tenable. Many hospitals[2] report a greater incidence of pneumococcic meningitis than the meningococcic type. Pneumococcic meningitis is most common in winter months as the diseases to which it may be secondary are more prevalent during this season.

Those conditions to which pneumococcic meningitis is most commonly secondary are pneumonia, otitis media, skull fractures (recent and old), sinusitis, mastoidectomies, endocarditis and idiopathic. No particular type of pneumococcus is more prone to cause meningitis than another.

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*Read before a Staff Meeting of King County Hospital, Seattle, Wash., March 12, 1941.

[1] Whitby, L. E. H.: Chemotherapy of Bacterial Infections. Lancet., 2:1095-1103, Nov. 12, 1938.

[2] Rhoads, G. S., et al.: Treatment of Pneumococcic Meningitis. J. A. M. A., 115:917-922, Sept. 14, 1940.

The diagnosis of pneumococcic meningitis is not too difficult. The usual signs of any meningitis are present, final diagnosis resting upon the character of the cerebrospinal fluid. The gram-positive pneumococcus is readily found in the purulent fluid and the organism can be typed by any of the various methods. An early diagnosis cannot be overstressed as the success of treatment depends a good deal on early active therapy.

The two main weapons used in treatment of pneumococcic meningitis are sulfapyridine and specific antipneumococcic serum. There is apparently a difference of opinion among the authorities as to the efficacy of using one alone or both together. The weight of evidence would indicate an inclination to use both sulfapyridine and specific serum.

Hodes, Gimbel and Burnett[3] reported a series of seventeen cases with eight recoveries, in which no antipneumococcic serum was used. They found the concentration of sulfapyridine was higher in the spinal fluid when the drug was given intravenously. In this series the spinal fluid concentration ran from 30 to 50 per cent of the blood sulfapyridine level.

MacKay and Hurteau[4] reported four cases of pneumococcic meningitis treated with antipneumococcic serum and sulfapyridine and concluded that "a more rapid and complete response was obtained when specific serum was used in addition to sulfapyridine than when the latter was used alone. Low blood levels of sulfapyridine in cases receiving serum were not accompanied by exacerbations of the disease, but were in cases not receiving serum."

Gross, Cooper and Lewis,[5] while experimenting with animals with Type II pneumomoccus, found that serum and chemotherapy were most effective.

Shaffer, Enders, and Wilson[6] found a temporary destruction of large numbers of pneumococci in human beings and neutralization of a considerable amount of specific soluble substance with relatively small quantities of antipneumococcic rabbit serum. From this it is to be concluded that early treatment with specific serum is beneficial.

In administering sulfapyridine, it is of prime importance to obtain a high blood sulfapyridine level as soon as is feasible; 10 to 15 mg. is suggested as a desirable blood level. However, in seventy-one reported cures the average blood sulfapyridine level was approximately 6 to 8 mg. In those cases reported, in which the spinal fluid sulfapyridine was determined, 30 to 60 per cent of blood sulfapyridine level was found.

Marshal and Long[7] were the first to use the sodium salt of sulfapyridine intravenously. The first two or three doses of this chemotherapeutic agent should be given by the intravenous route to insure a rapid, high blood level. Exposure of the pneumococcus to continuous sublethal doses of sulfapyridine brings about a tolerance or establishes a fastness of the drug to the organism.[8]

One should not depend on mouth dosages as an index to blood levels and, also, one should not depend on blood levels as an absolute indication of cerebrospinal fluid level of sulfapyridine. Frequent blood and cerebrospinal concentration determinations are essential to indicate future doses. The efficiency of sulfapyridine depends on maintenance of high blood and cerebrospinal fluid levels. These levels may fluctuate rapidly because of the characteristic variability of the extent of absorption and excretion. Discontinuance of the drug too soon after an afebrile state is reached is not desirable. It should be continued from one to two weeks thereafter. Sulfapyridine cannot be given subcutaneously or intrathecally as it is alkaline, having a pH of 11.

Contrary to the former measures of repeated spinal fluid drainages, McAlpine and Thomas[9] suggest that it is desirable to avoid drainage as we are only removing the drug from the spinal fluid and losing considerable of its bacteriostatic effect.

The treatment of the primary focus should be carried out, for example, paracentesis in case of otitis media or the exposure of the mastoid cells in mastoiditis.

Two cases which were treated in King County Hospital are of particular interest to report at this time because, although the blood sulfapyridine levels were high, the spinal fluid sulfapyridine levels did not rise above a trace. This obstacle has not been mentioned in the literature to date.

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[3] Hodes, H. L., Gimbel, H. S. and Burnett, G. W.: Treatment of Pneumomoccic Meningitis with Sulfapyridine and Sodium Salt of Sulfapyridine. J. A. M. A., 113:1614-1619, Oct. 28, 1939.

[4] MacKay, F. H. and Hurteau, E. F.: Four Cases of Pneumococcic Meningitis Treated with Sulfapyridine. Canad. M. A. J., 42:463-464, May, 1940.

[5] Gross, P. and Cooper, F. B.: Chemotherapy of Experimental Type II Pneumococcic Meningitis. Am. J. M. Sc., 197:609-617, May, 1939.

[6] Shaffer, M. F., Enders, J. F. and Wilson, J.: Effect of Artificial Fever and Specific Antiserum on Organisms Present in Cases of Type III Pneumococcus Meningitis. J. Clin. Investigation, 17:137-144, March, 1938.

[7] Long, P. H.: Sulfapyridine. J. A. M. A., 112:538-539, Feb. 11, 1939.

[8] Armitage, T. F. H. and Turnbull, F.: Pneumococcic Meningitis; Report of Two Cases. Bull. Vancouver M. A., 16:260-264, June, 1940.

[9] McAlpine, D. and Thomas, G. C.: Pneumococcal Meningitis Treated with M. & B. 693. Lancet, 1:754-756, April 1, 1939.

CASE REPORTS

Case 1. A white married male, age 43, was admitted Dec. 6, 1940, in a delirious state. Forty-eight hours prior to admission he complained of severe headache and vomited. The following day he became delirious.

For the past several years he had had a chronic draining right ear, which began to drain more profusely the past week concurrently with a bad "cold."

On admission temperature was 102.6° rectally. The patient was irrational. The neck was rigid, all reflexes hyperactive, and there was a generalized spasticity.. Babinski, Gordon and Oppenheim reflexes were negative. Spinal tap revealed a yellowish, cloudy fluid under increased pressure. Laboratory reported 10,000 cells per cmm., all polys, and Type V pneumococci.

One hundred thousand units of Type V antipneumococcic serum were given intravenously as were also three grams of sodium monohydrate sulfapyridine (60 cc. of a 5 per cent solution). Following this, 2 grams of soluble sulfapyridine were given intravenously every four hours. Eleven grams were given in all.

The blood sulfapyridine level was 11.4 after 7 grams of sulfapyridine were given. At 3 p.m., Dec. 7, blood sulfapyridine level was 16 mg. A spinal fluid sulfapyridine level taken at the same time showed only a faint trace of the drug present. The patient expired at 6 p.m.

Case 2. A 6-month, white, male infant was admitted to the hospital on Nov. 20, 1940. For the past two days the infant had become highly irritable, crying at the least disturbance, vomiting a number of times and coughing. He had caught a "cold" three weeks prior to admission which did not clear up.

Temperature was 103° rectally. Physical examination revealed an infant of about six months with moderately stiff neck. The child cried continuously. There was slight bulging of the fontanelle, mild pharyngitis. Kernig was positive. Spinal tap revealed 200 cells per cmm. and many pneumococci which typed as Type XIV. A prolonged course of eighteen days ensued.

As the infant took medication by mouth well, oral sulfapyridine was started. Also, 50,000 units of type specific antipneumococcic serum were given intramuscularly and on Dec. 7 20,000 units were given intravenously.

Blood sulfapyridine level was 17 mg. on Nov. 26. From Nov. 25 to Dec. 3 the spinal fluid sulfapyridine level was read five times and at no time was there more than a trace reported.

The patient expired Dec. 8.

SUMMARY

1. Pneumococcic meningitis is not a too infrequent occurrence.

2. Most common in the winter months.

3. Usually secondary to pneumonia, otitis media, skull fractures, sinusitis, mastoidectomies.

4. Diagnosis rests on characteristic meningeal irritation signs and spinal fluid findings.

5. Specific antipneumococcic serum and sulfapyridine are two specific weapons.

6. Early high sulfapyridine blood and spinal fluid levels are desirable.

7. Two fatal cases are reported, in which the spinal fluid showed only a trace of sulfapyridine, although blood levels were high.

VITAMIN B_1 IN CHRONIC BRONCHITIS

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In a series of over two hundred patients treated intensively over long periods with vitamin B_1 intravenously, I have several times noted unexpected favorable sequelae which I have been impelled by thoughtful consideration to ascribe to the treatment. This communication is concerned with eight cases, four men and four women, wherein chronic bronchitis of the aged, with or without asthma, was either cured or greatly improved during such treatment. One case, the most difficult of the eight, is given in sufficient detail to illustrate important aspects of the procedure.

To my knowledge there has been no report in the literature of thiamine hydrochloride being thus used. This distressing condition is so common that practically all clinicians have material at hand to try this therapy for themselves. Moreover, orthodox methods of treatment are very unsatisfactory, while results with vitamin B_1 are objective and unequivocal, therefore, easily evaluated. It is sincerely hoped that someone with abundant clinical material will develop the possibilities and limitations of this method in much greater detail.

CASE REPORT

I was called in the night of June 9, 1940, to see Mr. H. W. K., a prominent business man of our town. The immediate emergency was extreme dyspnea of an asthmatic type. The patient, a tall man, thin almost to the point of emaciation, was sitting in a chair coughing weakly in a fruitless attempt to dislodge mucus accumulated in the trachea. His chief complaint, gasped out in desperation, was that he was being strangled by the mucus. There was considerable acrocyanosis. The pulse was 115 and very irregular both in rate and in rhythm.

Fifteen years previously there had been a thyroidectomy for toxic goiter. Except for nervousness health had been fair until four years before the present episode, when a chronic cough had developed with increasing weakness, nervousness and "heart trouble." The cough became so severe that for a year a receptacle had been placed near the bed at night to receive the almost constant flow of mucus. For several months this mucus had been thick and tenacious and frequently was coughed up in the form of a heavy plug. The respiration was asthmatic, of the "intrinsic" type. Moreover, the asthma was definitely not affected by extrinsic factors such as seasons, food and pollens.

Immediately I administered 1.0 cc. adrenalin solution hypodermically but in ten minutes there was no improvement. Then in hope of improving the heart action and because in other cases of bronchitis of this type I had thus brought relief, I gave 30 mg. thiamine hydrochloride solution intravenously. Very shortly the patient professed to feel much better. He seemed to be breathing much more easily. That this might be due to a delayed action of the adrenalin was taken into consideration, therefore this agent was used several times subsequently. After two days the adrenalin was discontinued entirely because the patient was certain it brought no relief. Half an hour after the first intravenous treatment I repeated the dose, then went home, leaving the patient feeling much improved.

The subsequent history may be briefly summarized. For about a week the patient was severely orthnopeic. Thiamine hydrochloride solution in doses of 30 to 40 mg. was given intravenously every six to eight hours, day and night. The interval of administration was regulated chiefly by the patient who seemed to be keenly aware not only of relief following an injection but he seemed to know just when another treatment was indicated. Ample doses of a barbiturate at night for a couple of weeks relieved persistent insomnia. After the third day a preparation of vitamin B complex of known potency was taken orally at each meal time. Potassium iodide solution was used in small doses for a couple of weeks.

The frequency of dosage of the vitamin B_1 was gradually decreased until in about six weeks once a day was usually sufficient. In five months all medication was discontinued except an intravenous thiamine hydrochloride several times a month (at the patient's request).

Now, after eight months, the patient seems entirely recovered. His appetite is good, he sleeps well, the complexion is good and he goes about his work in a normal way. He has gained fifteen pounds. During the entire course of treatment nearly 3000 mg. thiamine hydrochloride was used. He faithfully adheres to the high vitamin diet.

SUMMARY AND CONCLUSIONS

A man sixty-seven years old, with chronic bronchitis, severe intrinsic asthma and impending heart failure secured immediate relief from 30 mg. vitamin B_1 injected intravenously. With persistent treatment, involving the use of 3000 mg. thiamine hydrochloride in six months, also vitamin B complex by mouth, a high vitamin diet and a smattering of potassium iodide, the patient emerged entirely well.

This was one of eight such patients, similarly treated. Results were satisfactory in all cases. It is well worthwhile to try intensive, prolonged vitamin treatment in chronic bronchitis, with or without heart failure and intrinsic asthma.

Creation of a National Reservoir of Blood Plasma to be used by the Army and Navy for emergency transfusions, as well as for treatment of civilians injured in disaster, is now actively under way. Sponsor of the project is the American Red Cross which has undertaken the step in response to a joint request received early in February from Surgeon General James C. Magee, U. S. Army, and Surgeon General Ross T. McIntire, U. S. Navy.

Use of blood plasma for transfusion purposes has long been a subject of study on the part of the medical profession. These studies have shown that plasma has definite advantages over whole blood. For instance in traumatic shock and hemorrhage, two of the more frequent causes of death from wounds and injuries, plasma is ideal.

In these cases speed is the thing that counts and plasma lends itself to speedy use. It completely eliminates typing or cross-matching whereas when whole blood is used, either from a bank or donor, one or the other of these steps is necessary. This may prove exceedingly costly from the standpoint of both time and life, especially in the chaos that prevails in the wake of battle or disaster. Furthermore, plasma can be collected and stored at central, readily accessible points for lengthy periods while whole blood must be used soon after collection as it begins to deteriorate in a few days. Plasma may be transported any distance but whole blood, generally speaking, must be used near at hand as shaking damages it materially.

THE ALLERGIC NOSE*

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Synonyms are chronic catarrh, chronic sinus, atopic coryza, atopic rhinitis, perennial allergic rhinitis, perennial hay fever, nasal allergy, seasonal hay fever, pollenosis, nasal asthma.

From all points of view a disease of the nose, in which symptoms similar to those of hay fever extend throughout the entire year, must hold a position of considerable importance. The disease is one of chronicity and periodicity.

Nasal allergy, in the absence of hay fever or asthma, is usually not recognized as such because of its similarity to the common cold and sinus infection. In children it may also be confused with enlarged tonsils and adenoids on account of obstruction to breathing. This is probably the most common type of allergy. The nasal symptoms are frequently associated with other forms of allergic disease such as hay fever, asthma, urticaria, eczema, migraine, gastrointestinal disturbances, etc.

Hansel[1] has published interesting statistics showing the incidence of allergic disease in his own otolaryngologic practice: 35 per cent of patients in routine office practice had allergic disease, 44 per cent with nasal complications were allergic, 27 per cent with nasal allergy had hay fever (seasonal), 80 per cent with seasonal hay fever had nonseasonal hay fever as well, 90 per cent with pure seasonal hay fever had other sensitivities than pollen and other manifestations of allergy, 40 per cent of general population have minor allergy, 15 per cent population have major allergy.

The pathogenesis of allergy becomes apparent to the pediatrician[2] who is in a position to study his patient from birth. Its growth and development are seen in the infant with eczema, persistent colic and vomiting.[3] Eighty to ninety per cent of allergic individuals will show these first symptoms before one year of age. This progresses into other forms of allergy such as frequent colds and coughs, the beginning of the allergic nose. Hay fever, asthma, hives, etc., may also occur. Eczema frequently disappears spontaneously at about eighteen months of age, only to reappear as another form of allergy, usually nasal and often associated with asthma.

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*Read before a meeting of King County Medical Society, Seattle, Wash., Nov. 4, 1940.

1. Hansel, K. H.: Allergy of Upper and Lower Respiratory Tracts in Children. Ann. Otol., Rhin. & Laryng., 49: 579-638, Sept., 1940.

2. Barnett, E. J. and Carnahan, H. D.: Nasal Allergy in Children. Arch. Otolaryng. 30:245-252, Aug., 1938.

3. Clein, N. W.: Allergy in Infants. Significance of First Allergic Manifestations. Northwest Med., 38:9-12, Jan., 1939.

The infant or child with early allergy is the potential patient with major allergic disease as he grows older. Few individuals develop asthma who have not had a previous history of some earlier allergic manifestation.

PATHOLOGY

The pathology of allergy is edema and eosinophilic infiltration of the tissue which is involved, whether in the nose, bronchial tubes or gastrointestinal tract. The eosinophiles will migrate through the epithelium and are found in the secretions. Nasal and sinus secretions, therefore, may be valuable as diagnostic agents. The cytology of these secretions may be an index of pathologic process in the tissues. Polyps are always an indication of underlying allergy.

SYMPTOMS

Symptoms of the allergic nose resemble hay fever and have the same basic mechanism. They are usually milder, do not affect the eyes, and occur at any season. In most cases they are as classic as those for other diseases. The adult patient complains of nose trouble, usually of years duration. His nose is "stuffy" usually every night while in bed, and on arising in the morning. This is the one cardinal symptom. He will usually state that in an hour or two after arising his nose becomes clear so that he can breathe freely through both nostrils. During the day the nasal passages are usually open although there may be occasional stuffiness.

His trouble begins when he gets into bed. Within a short time one nostril becomes congested, usually on the side on which he happens to be lying. This obstruction may last for a few minutes or all night. On changing from side to side the nasal stuffiness may also change from one nostril to the other. Usually only one side is closed at a time, although both may be obstructed. Frequently the patient awakens with a dry mouth as a result of mouth breathing. A bad taste as well as a foul odor may be present. On arising he rasps, hacks, and clears his throat, spitting out varying amounts of thick gray mucus. The nose is blown frequently without much result. The patient often has a dull headache or "heavy feeling." Fatigue is often more noticeable in the morning than at the end of a day's work.

Headaches are frequently associated. So-called chronic vacuum headaches, migraine, bilious spells and sinus headaches, often occurring behind one eye, on one side of the head or in the occiput are usually part of an allergic condition. In these cases the otolaryngologist will usually discover mild nasal symptoms which will direct his attention to the associated and underlying allergic condition. Many migraine or "bilious" headache cases are of an allergic etiology. Deafness, often becoming permanent, may be due to nasal allergy involving the eustachian tubes. Chronic fatigue and general malaise occur with the above symptoms. Other forms of allergy may be present as well.

Seasonal nasal allergy or plain old fashioned hay fever is well recognized. We have two rather definite seasons in Seattle. The trees that cause hay fever pollinate from the end of February to May. They are chiefly the hazel nut, alder, birch and maple. The common grasses cause most hay fever symptoms. These are many and pollinate from mid-April to the early part of August. Patients with the perennial type of nasal allergy, who also have seasonal hay fever, usually have more marked symptoms during the pollinating season.

In young children these symptoms are characterized by frequent colds and chronic coughs.[4] They no sooner get over one cold than they come down with another. The nose is always running. Coughing is prevalent, especially at night and early morning. Fever is usually absent. These so-called colds take a long time to clear up.

In a great majority of cases the history will state that the patient has had many varied and bizarre methods of treatment. The common story in children is that they have had tonsil and adenoid operations, cold shots or pills, quartz lamp, vitamins A, B, C, D, E, medicines, tonics, change of climate, many doctors. In adults we may add sinus treatments, often for years; nose packs, sinus irrigation, nose and sinus operations, short wave and various electric treatments. But they return to the physician with the same complaints and symptoms.

The history is of vital importance as the physical examination may be entirely negative at time of examination. In the physical examination only about 50 per cent with allergic nose disease will show characteristic nasal edema and pallor; therefore, the diagnosis cannot always be made on local findings. Have the patient blow each nostril separately to note any obstruction. This is the most simple test.

DIAGNOSIS

Diagnosis of nasal allergy is similar in every respect to that of other allergic conditions. Chronicity of the symptoms, plus the fact that all previous treatment has been of no avail, should immediately suggest an allergic basis for the symptoms. Too much emphasis cannot be placed upon the importance of repeated examinations of the patient and his nasal secretions before disproving the presence of allergy. Nasal smears will almost invariably show a predominance of eosinophiles in allergic nose conditions. It may be necessary to test several smears to confirm the diagnosis.

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[4] Clein, N. W.: Allergy as Cause of Frequent Colds and Chronic Coughs in Children. Northwest Med., 35:347-353, Sept., 1936.

Roentgen findings of the nose and sinuses in allergic individuals have been quite misleading and misinterpreted, until recent years. Positive sinus findings are the rule rather than the exception, due to edema of the sinus mucosa similar to the nasal edema. Infection of the sinus is not as common a complication of respiratory allergy as generally believed.

Foods as a cause of nasal stuffiness are much less important than inhalant factors. They are more of a factor in infants and young children. After the age of three to four years inhalant factors become predominant. Nasal symptoms due to foods are always more prominent during the daytime, when one eats his food.

The patient who is bothered more during the night and early morning is sensitive to allergens which he inhales. The air in his bedroom contains dust which has many minute particles from feathers in pillows, kapok, hair or cotton in the mattress, wool from rugs and blankets, clothes, drapes, pictures, trophies, especially animals, powders, shampoos, perfumes, sprays, smoke, pets, shaving lotions, etc., pollens, molds, any or all of which may be factors irritating the nasal mucosa.

TREATMENT

Treatment of allergic disease, as in other chronic constitutional ailments, is often a matter of months and years. As with the diabetic or tuberculous patient, it is necessary to plan a program covering the actions and habits of the individual over a period of years. Too many failures have resulted from those who expect to be cured by eliminating a food or a feather pillow, or by expecting results within a very short while. The patient must understand that the allergic study is just another diagnostic test, not a treatment. Treatment is mapped and governed by results of the testing. Seventy-five to ninety per cent of these patients can be given satisfactory relief with proper allergic management.

Specific treatment may consist of one or all of the following routine:

Diet, elimination or by tests. Avoidance of specific allergens, environmental control factors, dust-free room.

Specific desensitization with antigens made from: pollens, molds, epidermals or dust. This is of greatest importance in the type of case under discussion as the inhalant factors are in the dust in the air of the bedroom. Medication is of very little value other than nose drops such as neosynephrin which give symptomatic relief.

Although there are definite indications for tonsillectomy in many patients with respiratory allergy, this should not be performed primarily for relief of allergic symptoms. Indications should be the same as in nose and throat without nasal allergy. If tonsillectomy has to be done, this will not materially influence the allergic symptoms.

Occasionally surgical procedures afford some relief. In any eventuality, however, operations on the nose should be performed only after proper treatment of the allergy. Even then such a measure should be resorted to only in carefully selected instances and always after a consultation between a competent allergist and an ear, nose and throat specialist.

SUMMARY

The allergic nose is a common entity. Symptoms are primarily those of nasal obstruction occurring more frequently during the night. Recognition of the allergic factor with a thorough, careful allergic study will usually furnish sufficient information to make available adequate treatment which is usually effective.

METASTASIS OF CARCINOMA OF KIDNEY TO HEART AND THYROID*

REPORT OF A CASE

William B. Dublin, M.D.
FORT STEILACOOM, WASH.

Metastases from the kidney to the thyroid and heart are rare. Pemberton and Bennett[1] found references to four such instances of metastasis to the thyroid and added two of their own. No additional cases were found in a recent review of Mayo Clinic material.[2] Involvement of the heart is even more uncommon. Morris[3] referred to a case of Betzdorff, in which metastasis from renal carcinoma to the heart occurred. One instance of invasion of the

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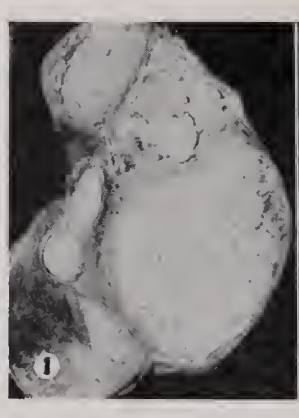
[1] Pemberton, J. de J. and Bennett, R. J.: Hypernephroma of Thyroid Gland: Review of Literature and Report of Two Cases, Surg. Clin. N. Am. June, 1934, pp. 593-599.

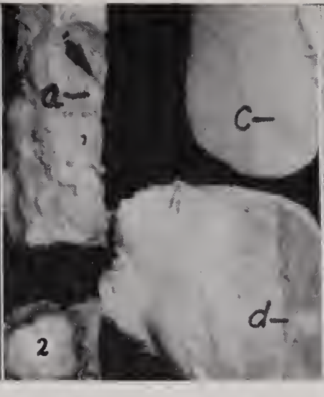
[2] Schlicke, C. P.: Personal communication to the author.

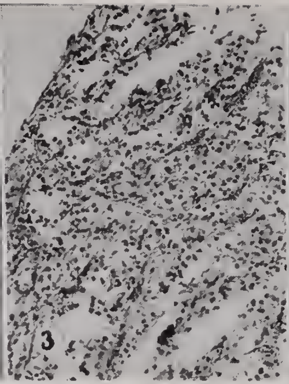
[3] Morris, L. M.: Metastases to Heart from Malignant Tumors, Am. Heart J. 3:219-229 (Oct. 1927-Aug. 1928).

* Since completion of this paper an additional instance of metastasis to the thyroid has been encountered, from a recurrent carcinoma of the breast in a 55-year-old man.

*From Division of Pathology, Western State Hospital.







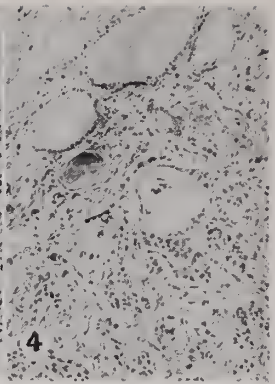


Fig. 1. Gross photograph of renal tumor.

Fig. 2. Gross photograph of metastic lesions: a, thyroid; b, lung; c, left kidney; d, heart.

Fig. 3. Photomicrograph of carcinoma of kidney.

Fig. 4. Same of metastasis to thyroid.

right auricle by direct extension through the renal vein and vena cava was encountered. No instance of involvement of both heart and thyroid was found.

REPORT OF CASE

The patient, a white man, aged 64 years, was admitted to Western State Hospital December 30, 1914, for treatment of dementia praecox. No change in the mental condition occurred, and no complaint of physical disorder was made, until February, 1940. At that time, loss of weight and weakness were observed.

During September the patient complained of alternating periods of diarrhea and constipation. Gastrointestinal roentgenologic examination gave negative results; a barium enema was suggested, but the patient declined to submit to further diagnostic study. He became increasingly weak and emaciated in spite of treatment with concentrates of vitamins and high caloric diet, and expired October 9.

The significant postmortem findings in brief are as follows:

Emaciation is marked, the panniculus measuring 2 mm. The right kidney consists of a multilobulated mass weighing 1555 gm., and measuring 8x10x16 cm. (fig. 1). It is encapsulated. The cut surface is soft, yellow and in the main homogenous, with advanced degeneration and an area of hemorrhage in the inferior portion of the mass. The renal vein is filled with tumor to a point 2 cm. from the vena cava; the latter is uninvolved.

Numerous metastic nodules are found; these are white and firm. They are seen in the left lateral portion of left ventricle of the heart (fig. 2d); in peripheral portions of both lungs (fig. 2b); on the left lateral parietal pleura, upper surface of left lobe of liver, throughout the pancreas, studding the serosal surface of the intestine, in the substance of left adrenal and kidney (fig. 2c); in each lobe of the thyroid gland (fig. 2a) and beneath cortex of right parietal lobe of the brain. Firm, white, enlarged lymph nodes are seen in the omentum and along the aorta.

Additional findings are two organized infarcts of the spleen, and cholethiasis.

Microscopic examination confirms gross observations (figs. 3 and 4). The tumor consists of papillary formations of large, clear cells. Occasional imitation of renal tubules is seen. The histologic type is that of a renal papillary adenocarcinoma.

CLINICAL FORUM

OBSTETRIC PROBLEM

The patient, a white female, age twenty-three, para 0, gravida 1, presented herself on September 13, 1940.

History: Last menstrual period, 8/3/40 was entirely normal. Her past medical history, with the exception of cold extremities, brittle, dry hair and skin, had no bearing on this pregnancy. Her family history was also negative.

Physical Examination: Weight 123 pounds, blood pressure 130/64, pulse 72, heart and lungs normal, thyroid gland distinctly and symmetrically enlarged. A well healed scar in right rectus. Two finger vaginal examination impossible. Cervix rather elongated and infantile in type, no pelvic disease present.

External Pelvimetry: Inlet, inter spinous 20 cm., inter crestal, 25 cm., external conjugate, 20 cm., right oblique, 22 cm., left oblique, 22 cm. Outlet, arch approximately seventy-five degrees, bituberous diameter slightly under 8 cm., anterior sagittal, 5 cm., posterior sagittal, 9.5 cm., symphysis 6 x 1.5 cm., direction downward and in, sacral bodies moderately prominent, spines sharp, coccyx freely movable, diagonal conjugate could not be measured.

Laboratory: Hb. 80 (Sahli); Wassermann negative. Urinalysis negative. B.M.R. minus two.

Diagnosis: Mild, general contraction of pelvis.

Prognosis: Labor to be difficult with a baby over 6½ pounds in weight. Expected date of confinement—May 10, 1941.

Antepartum Course: Mild nausea and vomiting were controlled by the use of phenobarbital and thiamin chloride by mouth and intravenously. Patient manifested tendency to excessive weight gain early in pregnancy and she was placed on a 1500 calorie diet on November 1, 1940. On January 24, 1941 weight was 150 pounds; blood pressure 132/80; urinalysis negative; fundus at umbilicus. On March 28, 1941 weight was 159; blood pressure 136/78; urinalysis showed a trace of albumen; patient having slight headaches; rather marked edema of the face and feet and slight epigastric distress, with nausea.

Patient was admitted to the hospital and placed on forced fluids, salt free, neutral diet and ammonium chloride, with rapid loss of 11 pounds. Patient was discharged from the hospital to carry on with the outlined regime at home.

(Continued on Page 220)

POSTGRADUATE LECTURES

During the year postgraduate courses of lectures are scheduled for the profession in our three states. In order that these courses may become well known, and be presented to the readers of this journal from month to month, they will be hereafter listed under the above heading with certain details pertaining to each as they may be received for publication. In this issue appear data which have been received descriptive of each course of the lectures. In the future issues it is expected that these will be supplemented as more information is received concerning each of them.

OREGON

Courses For Which Information Will Be Published Later

Sept. 2-3 — Portland Academy of Medicine.

Sept. 3-6 — Oregon State Medical Society Postgraduate Session.

WASHINGTON

Pacific Northwest Medical Association

Spokane, June 25-28.

This postgraduate course consists of lectures on bronchoscopy, pathology, neurology, internal medicine, surgery, physiology, endocrinology, roentgenology and obstetrics.

Speakers are Russell L. Cecil of Cornell University Medical School; William J. Kerr of University of California; Perrin H. Long of Johns Hopkins; William Dock of Stanford University; Samuel Soskin of Michael Reese Hospital, Chicago; John deJ. Pemberton of Rochester, Minn.; Carleton Mathewson, Jr. of Stanford University; Louis H. Clerf of Jefferson Medical College; Louis J. Karnosh of Cleveland and L. C. Conn of the University of Alberta. Announcement appears on page 5.

University of Washington Annual Graduate Medical Course

Seattle, July 14-18.

Guggenheim Hall, University of Washington, July 14-18.

Lecturers for this course will be as follows:

Maurice G. Pincoffs, University of Maryland. Subject: Medicine.

Max Thorek, American Hospital of Chicago. Subject: Surgery.

John Saunders, University of California. Subject: Surgical Anatomy.

Howard C. Naffziger, University of California. Subject: Neurosurgery.

List of subjects appears on page 3.

PSYCHIATRIC INSTITUTE

FORT STEILACOOM, Sept. 1-14, 1941

Third regional postgraduate Institute for State Hospitals was held at the South Carolina State Hospital, Columbia, South Carolina from April 14 to 26. The Institute was under the sponsorship of the American Psychiatric Association through its Committee on Psychiatry in Medical Education, and was financed by a grant from the Rockefeller Foundation. The average daily attendance was fifty-five with a total of seventy-eight registered for the Institute. Sixteen states were represented. A variety of subjects was discussed including neuroanatomy, neuropathology, psychobiology, psychotherapy, neuroroentgenology, neuro-opthalmology, neuro-surgery, electroencephalography, clinical psychiatry, clinical neurology, and a group of related subjects.

Fourth Institute will be held at the Western State Hospital, Fort Steilacoom, Washington, from September 1 to 13, 1941. Those interested in attending the coming Institute should communicate with either Dr. William N. Keller, Superintendent, Western State Hospital, Fort Steilacoom, Washington, or Dr. Franklin G. Ebaugh, Colorado Psychopathic Hospital, Denver, Colorado.

IDAHO

State Medical Association Annual Lectures

Sun Valley, June 18-21.

The annual meeting of the State Medical Association provides a postgraduate course of lectures. The program for the Sun Valley meeting in June will present speakers from Stanford University School of Medicine, who will be as follows: William Dock, pathologist; David Rytand, internist; Nelson Howard, surgeon; Carleton Mathewson, surgeon; Morris R. Tainter, pharmacologist.

Instruction Courses

In addition to courses offered by guest speakers there will be a series of instruction courses offered by members of the Idaho State Medical Association. This feature was developed for the 1940 meeting and was so popular that it is to be repeated this year. List of instructors and subjects for these courses appears on page 224.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-SEVENTH ANNUAL MEETING, PORTLAND, SEPT. 3-6.

EDITORIAL

YOU CAN HELP YOUR SOCIETY

We often hear, "What does the Council do?" or, "The Council never does anything for us." Why doesn't somebody think to ask, "What can I do for the Council?" or, "What can I do for the Oregon State Medical Society?"

Council members—past, present, and future—are guilty of this attitude. Too many people want someone to do something for them and fail to remember that it is much wiser to see if there is something they can do to help. The Council is busy. It has protected and will continue to protect the private practice of medicine just as long as physicians want it protected—yes, even longer.

The Council has stuck to its established policies with far greater zeal and steadfastness than many physicians have—fortunately. Can its critics speak with anything that approaches as clean a slate? Those who have served earnestly might be allowed a criticism, but those who bellow to hear their own voices echo in the halls do much to destroy the efficiency of a hard working body.

O.S.M.S. vs. F.S.A.

The Farm Security Administration wants to set up what amounts to a hospital association for its so called standard borrowers. For more than two years the F.S.A. has tried to break through the barrier of established principles of the Oregon State Medical Society but has always found the state council adamant. Now the F.S.A. approaches the physicians of various county societies with a plan for medical care for farm families; it is their plan and one not acceptable to or embracing the established principles of the State Medical Society.

These principles are as follows:

1. The O.S.M.S. will be advisory to any plan and will not participate on its Board of Management.
2. Medical policies are to be determined by the State Medical Society.
3. No physician shall be refused certification by the Board except on recommendation of a local medical society and with the right of appeal to the Oregon State Medical Society.
4. A medical director to supervise medical service (throughout the state) should be chosen only with approval of the O.S.M.S. *before* employment.
5. Employment of a full time physician, or a part time physician on a rotation basis, to render medical service, is advisable.
6. No fee schedule is approved.

These principles should be clear enough and study of them will indicate what is "in the wind."

RECOGNITION OF GOOD SERVICE WILLINGLY GIVEN

We cannot resist the impulse to reprint the following editorial commendation of the physicians who willingly give their services for examination of men called to the nation's defense. This editorial appears in *The Bend (Oregon) Pilot* on May 2, 1941.

How many people know that the doctors who serve the local draft board give their services absolutely free? This takes much of the time of doctors in every part of the country. It has been granted generously, with no thought of reward. The young men who are being taken for the nation's defense have the satisfaction of knowing they are receiving the best medical examinations of any army recruits anywhere in the world.

How striking is the contrast between the attitude of the doctors in giving this valuable service, and the attitude of managements and certain labor leaders who are endangering the defense program, through their petty promotion of ego.

TENTATIVE PLANS FOR ANNUAL MEETING

Partial list of speakers was announced last month. The following addition has been made:

Frank H. Lahey
Boston, Mass.
President-Elect, American
Medical Association

"Some of the Newer Developments in Medicine and Surgery"

OREGON STATE BOARD OF MEDICAL EXAMINERS

In accordance with authority vested by recent enactment of the Oregon Legislature, the second regular State Board examination in medicine and surgery and in osteopathy will be held in July instead of June this year. The dates have been set for July 24, 25 and 26, and the examination will be held, beginning at 9:00 o'clock each morning, at the University of Oregon Medical School Library, Marquam Hill, Portland. Application blanks and rules and regulations of the Board may be obtained by calling at the offices of the Board located at 608 Failing Building, Portland, which applications must be filed on or before July 9, 1941.

Through the courtesy of the Basic Science Examining Committee, grades issued pursuant to the July 12th basic science examination at Corvallis, will be available in time for such applicants to take the State Board examination or submit applications for reciprocity.

The Board will meet at the same time examinations are held in order to consider reciprocity applications and to conduct such business and hearings as may be pending.

STATE BOARD OF HEALTH

Former Staff Member Honored

Olive Whitlock, former Director of the Division of Public Health Nursing has been appointed as Consultant in Industrial Nursing Division of State Relations, United States Public Health Service.

May Day Celebrated

May Day—the Child Health Day—was celebrated around the state in various sections with May Day programs serving as a focal point for revealing activities for child health during the previous year and planning new activities for the coming year. Local Health Departments, Medical Societies, Dental Societies and School Systems co-operated in conducting programs. The defense needs at the present time made these meetings of special importance.

Local Health Officer Receives Appointment

J. C. Haldeman, County Health Officer of Wasco County, has recently received his appointment to the Commissioned Corps of the United States Public Health Service. Doctor Haldeman's work in Wasco County has been particularly outstanding and it was during his administration as Health Officer that Wasco County received the Prize Winning Award for the Western Division of the Rural Health Conservation Contest carried on by the Chamber of Commerce of the United States in cooperation with the American Public Health Association.

Health Officers Meeting Planned

The annual meeting of Oregon Health Officers will be held June 9, 10, and 11 in Portland at the Multnomah Hotel. In conjunction with this meeting will be held the annual convention of the Oregon State Nurses Association, the State Organization for Public Health Nurses and the Oregon State League of Nursing Education. One of the principal speakers of the meetings will be Gurney Clark of the Johns Hopkins University whose subject will be "Basic Elements of a Syphilis Control Program."

Staff Member Appointed to Board

Miss Lucile Perozzi, Director of the Division of Public Health Nursing has been appointed by Governor Sprague as a member of the Oregon State Board of Examination of Registration of Graduate Nurses.

New Local Health Officer Appointed

Elizabeth Bishop has recently been appointed Health Officer of Baker County. Doctor Bishop recently completed a year's post-graduate training in public health at Harvard University. She has had three years of practical experience in communicable disease hospitals in New York City. She is a graduate of Willamette University and the University of Oregon Medical School.

Staff Member to Return

Samuel D. Allison, Director of the Division of Venereal Disease Control will return to Portland on or about June 1 after a year's post graduate training at Johns Hopkins University. Doctor Allison on his trip home stopped at several of the outstanding clinics and attended the Western Branch meeting of the American Public Health Association.

Staff Members Travel

Frederick D. Stricker, State Health Officer, Mr. Carl Green, State Sanitary Engineer, Miss Lucile Perozzi, Director of the Division of Public Health Nursing, Miss Aileen Dyer, Miss Rosannah Winter, and Miss Laura Harstad attended the Western Branch Meeting of the American Public Health Association held in San Diego during the latter part of May. Mr. Green has been invited to give a paper entitled "Why Plumbing Should Be a Health Department Function." He has also been asked to participate in a panel discussion entitled "Maintaining Intact Local Health Service—A Keystone of National Defense."

MEDICAL NOTES

The Portland Academy of Medicine held meetings May 12, 13, and 14 at the University of Oregon Medical School Auditorium. Virgil H. Moon, Professor of Pathology and Director of the Pathological Laboratories of Jefferson Medical College, was guest speaker. His subjects were Circulatory Failure of Capillary Origin; Shock: Condition of Occurrence and Sequalae, and Shock: Prevention, Early Recognition and Treatment.

The Wilcox Memorial Building and Good Samaritan Hospital, Portland, have announced plans to build an annex to the Wilcox Memorial Building. The structure will contain three stories and a basement, and will cost approximately $150,000.

Land for the proposed Nyssa Community Hospital has been donated by the Amalgamated Sugar Company.

Articles of Incorporation have been filed by the Clinical Studies Foundation of Astoria for the purpose of conducting research on vitamins and allied substances. Incorporators are: J. V. Straumfjord, F. M. Franciscovich, Richard Carruthers, and Allen Boyden of Astoria, and E. S. West of Portland.

Ralph Matson, Portland, addressed the Klamath County Public Health Association, Klamath Falls, May 16, on "Progress Made in Recent Years in Treatment of Tuberculosis."

Adolph Weinzirl, Portland Health Officer, addressed the Yamhill County Health Association April 24 in McMinnville, on "Community Responsibility for Health." Mrs. Ted Rossner, Dayton, was elected president for next year.

Walter Futrelle, Little Rock, Arkansas, has been appointed Chief Medical Officer of the Veterans Hospital at Roseburg.

W. P. Goulding, formerly of Corvallis, has relocated in Scio.

OBITUARY

John Leonard George, M.D., died in Tillamook May 16, at the age of 69. He came to Oregon from Iowa in 1892 and graduated from Willamette University Medical School in 1907. He practiced medicine at Cottage Grove, Creswell, and Cloverdale before retiring and becoming secretary of the Federal Land Bank in Tillamook in 1933.

SOCIETY MEETINGS

LANE COUNTY MEDICAL SOCIETY

Lane County Medical Society held a special meeting May 16 at Eugene.

Ladies' night was celebrated May 23 at the Eugene Country Club. The program consisted of music, an Oregon Travel Film, and a twenty minute talk by Professor Marvin Krenk.

COOS AND CURRY COUNTY MEDICAL SOCIETY

The Coos and Curry County Medical Society met at Marshfield May 7. Martin Howard of Portland spoke on "Appendicitis in Adults," and C. W. Brunkow of Portland on "Appendicitis in Children."

MULTNOMAH COUNTY MEDICAL SOCIETY

First meeting of the month was held May 7. James B. Haworth spoke on "The Roentgen Treatment of Infections," Donald E. Forster spoke on "Vitamin B Complex," and Merl L. Margason spoke on "Migraine."

Second meeting was held May 21, at which time Lester R. Channcey spoke on "Relationship of Serum Proteins to Gastric Retention," and Thomas Montgomery spoke on "Office Urology."

JACKSON COUNTY MEDICAL SOCIETY

Members of the Jackson County Medical Society met April 23 at the Rogue River Lodge. It was the twentieth anniversary of the Society, and members and guests dressed in clothes of the early days. Eugene Rockey, Portland, was honored guest.

SOUTHERN OREGON MEDICAL SOCIETY

Golden anniversary meeting of the Southern Oregon Medical Society was celebrated in Klamath Falls May 16. James E. Campbell, Roseburg, was elected president; E. D. Everett, Lakeview, vice-president and F. C. Adams, Klamath Falls, secretary-treasurer. Guest speakers present were: Bradie Stephens, San Francisco, Homer P. Rush, Portland, Verden E. Hockett, Salem and George E. Henton, Portland.

MARION-POLK MEDICAL SOCIETY

Regular meeting of the Marion-Polk Medical Society was held in Salem on May 13, 1941. Arthur C. Jones, of Portland, spoke on "Some Aspects of Manipulative Surgery," emphasizing the necessity for detailed examination of joint areas and the value of careful manipulation in disorders of these areas.

W. W. Baum, President-elect of the Oregon State Medical Society, discussed the plan of medical care proposed by the Farm Security Administration, and urged that this Society reject the plan and follow established principles of O.S.M.S. in this regard.

Discussion of relief cases was given by Kenneth Power, who urged physicians to obtain written authorization before giving medical care. Dr. Power also urged physicians to register for the type of work they wish to do.

Mr. William Galesdorf, Superintendent of the Salem General Hospital, outlined the indemnity insurance plan of the Mutual Benefit Society for giving medical care. This problem was referred to the proper committee for further study and for subsequent report.

UMATILLA COUNTY MEDICAL SOCIETY

The Umatilla County Medical Society held its last meeting Tuesday, May 13, at which time we were favored with a very fine discussion of "Aviation Medicine" by Harold A. Myers of the new Pendleton air base.

Other items of business were noted, in particular the matter of Farm Security Administration. The society went on record as not in favor of any such plan for this county at this time.

Further business mentioned was the matter of National Preparedness cooperation. The committee acting on this matter is going ahead with the appropriate forms that have been sent out from National headquarters. At the present time only two doctors from this society have been taken into active military service, namely R. L. Kessler, who has been serving at Fort Lewis since November 10, 1940 and Wm. M. Marbut of Hermiston, who went into service about April 15. We believe he is to be located at Vancouver, Washington.

CLINICAL FORUM

(*Continued from Page* 216)

On April 29, 1941 weight was 162 pounds; blood pressure 178/100; albuminuria two plus, edema of face, hands and lower extremities to the knees. Patient readmitted to the hospital and previous dehydration regime again instituted, with loss of twelve pounds. Blood pressure the fourth day of hospitalization was 140/90, presenting part high and floating; cervix long and thick. Roentgenogram revealed no gross disproporition. It was decided to induce labor. Two attempts at medical induction of labor failed.

What would you do and why?

ANSWERS TO PRECEDING PROBLEMS

Comments on the first obstetric forum presentation continued to come in after the pediatric problem had gone to press. This is sure to recur since only about ten days elapse between the time that the busy doctor receives his Journal, gets time to read it, write his comments and submits them in time for the next publication.

An Oregon physician writes in detail what he would do with the problem reported in the April Forum. Summarized, he states this is a case of prolonged labor with exhaustion of the mother due to the fetal head being extended and the occiput located in the hollow of the sacrum. He believes that operative delivery is imperative: either forceps or version. Deep anesthesia will be necessary, preferably using ether. It is not necessary to use prophylactic episeotomy. By careful palpation of the baby's ear one can definitely confirm the diagnosis of occiput posterior; fontanelles and suture lines may be confusing, but ears are never on backwards.

After meticulous care in applying forceps cephalically and listening to the fetal heart tones, rotation should be done. While carrying out this procedure one must mentally visualize the unseen blades in the arc movement or severe damage to the birth canal may result. After the occiput has been brought around to an anterior position reapplication of the forceps should take place, using measures to insure the occiput's remaining in its new position. Traction in the usual

(*Continued on Page* 223)

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-SECOND ANNUAL MEETING, SEATTLE, AUG. 24-26

SPECIAL BULLETIN

TO: All County Medical Societies from the Washington State Medical Association.

The Department of Licenses, State of Washington, will notify all physicians in this state within a few weeks that Chapter 166 of the Session laws of 1941, formerly known as House Bill No. 370, will become effective July 1, 1941.

This new law calls for a $5 annual registration fee for all doctors of medicine in the state, and eliminates registration by doctors with the county clerks. Registration will be directly with the Department of Licenses. Registration forms to be filled out will be furnished by the Department, and will consist of a simple notice of the provisions of the law, with a place at the bottom for the signature, address and license number of the doctor paying the fee.

The $5 annual registration fee must be paid on or before July 1, 1941, and any failure, neglect or refusal to do so renders a license to practice medicine invalid, and shall only be reinstated upon written application to the Director and a payment of a $10 penalty, together with the delinquent renewal fee. In other words, failure to pay the $5 renewal fee on or before July 1st would automatically require a fee of $15.

MEDICAL NOTES

Hospital Association Meets. Washington State Hospital Association and Washington State Nurse Anesthetists Association and Washington State Association of Record Librarians held a joint meeting in Tacoma April 25-26. Governor Arthur Langlie was guest of honor at the Annual Banquet Friday evening. Principal speakers were Mr. Ellard L. Slack of Oakland, California, President of the Association of Western Hospitals, Col. Albert P. Clark, Chief Medical Officer from Ft. Lewis and Miss Henrietta Adams of Seattle.

Clarence J. Cummings of Tacoma was honored by being named honorary life president of the Association. Mr. Gordon Gilbert of Spokane was installed as president. Session next year will be held in Seattle.

Health Association Meets. Washington State Public Health Association held its annual meeting in Yakima May 16-17. More than 200 health officers, public health nurses and sanitarians attended the meeting. Among the speakers were Robert Dryar, Stockton, California, L. A. Dewey of Seattle, Donald G. Evans, Director of Washington State Dept. of Health, Adolph Weinzerl of Portland, Mrs. Margaret Allen of Seattle, and H. W. Lundy of Pullman. Guest of the Association was E. R. Coffee, Assistant Surgeon General of the U. S. Public Health Service and former acting director of Washington State Department of Health. Present at the meeting were Frederick B. Stricker, secretary of the Oregon State board of health, H. L. Newcom representing the Idaho department and Gregoire Amyot, provincial health officer of British Columbia. Election of officers resulted in selection of Arthur L. Ringle of Kelso, president, to succeed Wallace Hunt of Seattle, Emil A. Palmquist, first vice-president, Miss Elsie Aronson of Yakima, second vice-president and Francis Rhoads of Seattle, secretary-treasurer.

Encephalitis Study. W. M. Hammon of San Francisco, representative of the Hooper Foundation Laboratory of the University of California, has set up a field laboratory at Yakima to study encephalitis. Well defined epidemics of encephalitis have occurred in the Yakima area in two consecutive years. The laboratory expects to study all possible types of insects, small mammals and birds to determine possible carrier of the virus.

Unionization of Hospital Employees Attempted. Seattle, Local 6, Building Service Employees Union has attempted to unionize maids, janitors and orderlies employed in Seattle hospitals and has asked for a wage scale approximately double that now paid.

Yaikma Urologist Elected. At a recent meeting of Western Branch of the American Urological Association at Del Monte, F. H. Brush of Yakima was named President-elect.

Golf Trophy Returns to Seattle. Annual International Gold Tournament was held in Vancouver, B. C., May 1st, the Seattle group winning the tournament and bringing home the trophy which has been held by the British Columbia group for a number of years. D. H. Houston captained the Seattle team.

Locations. R. R. Kerkow, formerly of Oroville, has moved to Waterville where he will take over the practice of B. J. Ellis.

M. D. Wood formerly of Okanogan and Tonasket has moved to Deer Lodge.

Weddings. Michael J. Buckley and Miss Mona Firnstahl of Seattle were married in that city April 24. Bruce J. Webster of Seattle and Miss Madonna Enright of Seattle were married April 19.

OBITUARIES

Dr. Lee Henry Curran of Leavenworth, Wash., died suddenly from a heart attack April 27, aged 52. He was camp physician for the C.C.C. at the time. He received his medical degree from Ohio State University, College of Medicine, in 1913. He had previously been connected with the Indian Service.

Dr. Lewis A. Ling, medical corps captain at Ft. George Wright and formerly of Deer Park, died suddenly May 17. He was 30 years of age. He received his medical degree from the University of Iowa in 1934. He had practiced in Deer Park since 1937.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

Last meeting of the spring season of Cowlitz County Medical Society was held May 13 at Monticello Hotel in Longview. Plans were made for representation at the State Medical Society meeting in August with J. F. Christensen of Kelso and H. D. Fritz of Cathlamet as delegates.

A. B. Dykman of Portland, assistant professor of ophthalmology at the University of Oregon Medical School, spoke on "Ophthalmology in Medicine and Surgery" with special reference to the early management and treatment of the cross eyed child.

G. L. Boyden of Portland, assistant professor of otolaryngology at the University of Oregon, spoke on "Endaural Surgery" in which a new technique has been developed for performing mastoid operations through the ear canal thereby eliminating the unsightly scar behind the ear.

LINCOLN COUNTY MEDICAL SOCIETY

Annual meeting and election of officers of the Lincoln County Medical Society was held at Harrington, May 11. President for the ensuing year will be L. F. Wagner of Harrington, secretary, J. E. Anderson of Wilbur.

PIERCE COUNTY MEDICAL SOCIETY

Regular meeting of Pierce County Medical Society was held in the Medical Arts Building May 13, 1941, with H. J. Whitacre in the chair. Minutes of the previous meeting were read and approved.

James Blackman, of Seattle, read a paper on "Crushing Injuries of the Thorax." Discussion was by R. E. McPhail, J. F. Steele, B. D. Harrington, N. E. Magnussen, H. J. Whitacre and N. E. Magnussen.

L. T. McNerthney presented a case report of macrocytic anemia in a newborn. Discussion was by F. R. Maddison.

Proposed new Constitution and By-Laws were adopted by the society.

The following members were elected to serve for the year 1941-1942: President, Clyde Magill; Vice-President, C. V. Lundvick; Secretary-Treasurer, J. W. Read; Trustees, J. W. Gullikson, B. D. Harrington, S. M. MacLean, E. W. Janes; Delegate, F. R. Maddison; Alternate, W. C. Cameron.

SPOKANE COUNTY MEDICAL SOCIETY

Annual meeting of Spokane County Medical Society was held at the Country Club, Spokane, May 8. George H. Anderson was installed as president, J. G. Matthews was named president-elect, R. G. Boyd, secretary and W. H. Turner, treasurer. Trustees: R. G. Andres and Milo Harris. Frank Milburn was elected to the board of censors. Delegates to the annual meeting of the Washington State Medical Association are W. H. Towsey, Alfred O. Adams, J. M. Nelson and Donald Palmer.

WALLA WALLA VALLEY MEDICAL SOCIETY

Walla Walla Valley Medical Society held its regular meeting at the Marcus Whitman Hotel, Walla Walla, May 8. This was a joint meeting with the Bar Association. Attorney F. L. Stotler of Colfax discussed some of the common problems of medicine and law. Walter C. Woodward of Seattle was guest speaker for the Medical Society. At the business meeting of the Society the following officers were elected: E. J. Whitney, president; C. R. Garrett, vice-president; Harlan P. Kahler, secretary-treasurer. P. D. Brink and A. E. Lang were elected to the board of directors. Delegates to the Washington State Medical Association meeting are W. V. Frick and Morton Tompkins.

UTILIZE SPEAKERS' BUREAU

The Committee on Postgraduate Medical Education and Hospitals desires that the physicians who have volunteered their services be scheduled by the county medical societies for 1941. The subjects, with names of the speakers, are published in alphabetical order in this and subsequent issues until all have been listed. Requests for speakers should be made as far in advance as possible direct to the Committee on Postgraduate Medical Education and Hospitals, 218 Cobb Building, Seattle.

Leede, C. S.; Medical-Dental Bldg., Seattle.
1. Pneumonia on Pacific Coast.
2. Nephritis.
3. Gastric Ulcer.

Lemere, Frederick, Medical-Dental Bldg., Seattle.
1. Neurology; Epilepsy, Multiple Sclerosis, Encephalitis following Influenza, Brain Tumor, C. N. S., Syphilis, etc.
2. Psychiatry; Mild Depressions, Insulin and Metrazol Shock Treatments, Neuroses, etc.

Lien, Arthur E.; Court House, Spokane.
1. Subjects of General Surgical Interest.
2. Subjects Pertaining to Public Health.

Light, S. E.; Medical Arts Bldg. ,Tacoma.
1. Ringworm of the Hands and Feet.
2. Skin Manifestations of Syphilis.
3. Treatment of Acne Vulgaris.
4. Dermatology or Syphilology.

Lightfoot, L. R.; Becker Bldg., Aberdeen.
1. Errors in Technic in Abdominal Hysterectomy.
2. Treatment of Diverticulitis.

Lincoln, Miriam; Cobb Bldg., Seattle.
1. Subjects Dealing with Internal Medicine.
2. Obesity.
3. Endocrinology.
4. Diet.

Lingenfelter, J. S.; American Bank Bldg., Seattle.
Importance of Prenatal Care.

Loe, Ralph H., Medical Dental Bldg., Seattle
1. Place of Gastroscopy in Diagnosis of Stomach Lesions
2. Management of Bleeding Peptic Ulcer Patient.
3. Carcinoma of Proximal Colon.
4. Water Balance in Surgery.
5. Diagnostic Problems of Thyroid.
6. Acute Pancreatitis.

Loree, David R.; Arts Bldg., Vancouver.
1. Superficial Roentgen Ray Therapy.
2. Juvenile Endocrinopathies.
3. Mental Hygiene.
4. Diseases of Children.

Lower, R. A.; Medical-Dental Bldg., Spokane.
1. Cancer of Larynx.
2. Bronchoscopy.

Lynch, J. W.; 422 Riverside Ave., Spokane.
1. Organic Neurologic Subjects.
2. Neurosurgical Subjects.

Maddison, Frank R.; Medical Arts Bldg., Tacoma.
Subjects Pertaining to Internal Medicine, particularly Gallbladder Disease, Renal Disease, Diabetes Mellitus.

Magnussen, N. E.; Pierce County Health Dept., Tacoma.
1. Preventive Medicine.
2. Communicable Disease Isolation. Nurses' Course in Communicable Disease.
3. Teachers' Health Examinations now and as They Should Be.

4. Rabies Control: Swiss Mouse Test, Microscopic Negribody Test, Their Valuation on the Diagnosis of Rabies in the Animal.
5. School Health Programs. Place of Local Official Agency in a School Health Organization, School Nurse "A Glorified First-Aid Individual."
6. Finances and Budgeting a School Health Program for Small Schools.
7. Tuberculosis Case Findings Through Official Health Agency.
8. Coordinating Official and Court Case Finding.
9. Social Hygiene Topics as Control of Syphilis, and Sex Education for Young Individuals.

Manzer, T. T.; Medical-Dental Bldg., Seattle.
Surgery of Biliary Tract.

Mattson, W. W.; Medical Arts Bldg., Tacoma.
1. Diagnosis and Treatment of Goiter.
2. Diagnosis and Treatment of Gastric and Duodenal Ulcer.
3. Management of Perforation and Hemorrhage.
4. Indications and Contraindications for Pelvic Procedures during Childbirth.
5. Indications for Vaginal Hysterectomy.
6. Indications for Abdominal Hysterectomy.

McKinney, Mark W.; General Insurance Bldg., Seattle.
Importance of Prenatal Care.

Metheny, David; Stimson Bldg., Seattle.
1. Cancer of Stomach.
2. Recurrent Volvulus of Sigmoid.
3. Sliding Hernia.
4. Prolapse of Rectum.
5. Cholelithotomy.

Moore, Telford; Medical-Dental Bldg., Spokane.
1. Ophthalmology.
2. Reading Disability.

Mounsey, James K.; 407 Riverside Ave., Spokane.
1. Anorectal Diseases.
2. Colonic Function and Disease, Diagnosis, Treatment, etc.

Mowery, Chas. R.; Fernwell Bldg., Spokane.
1. Gastrojejunocolic Ulcer and Fistulas.
2. Intestinal Obstruction.

Mullarky, R. E.; Stimson Bldg., Seattle.
1. Peritoneoscopy.
2. Intrapleural Pneumonolysis (Jacobeus Operation).

Mullen, B. P.; 1305 4th Ave., Seattle.
1. New Method of Treating Perforated Peptic Ulcer.
2. Management of Abdominal Adhesions.
3. Intestinal Obstruction.

CLINICAL FORUM

(*Continued from Page 220*)

manner will deliver the baby. Since the report states "the chin was felt above the symphysis" it may indicate that rotation cannot be done, under these circumstances version will be necessary. However, this procedure should be considered a last resort method.

Answers to May Pediatric Problem

Final diagnosis in the pediatric problem last month was cystic hygroma with hemorrhage into one of the deep noncommunicating cysts. The treatment of this condition is surgical removal. X-ray treatment has been tried but with inconsistent results. The injection of sclerosing fluids is dangerous on account of the immediate proximity of important structures. Excision is difficult on account of the many ramifications and deep prolongations of the cysts, but is the most satisfactory treatment. In the present case there were deep portions of the cyst which it was impossible to excise but these were treated by plication with fine chromic catgut to stimulate tissue reaction and cause obliteration. At present—five months after the operation—there has been no recurrence.

Comments and suggestions on the above problem were most interesting. Among those received were the following,

In my opinion the most likely diagnosis is that of a deeply seated hemangioma. Other conditions that must be considered include hemorrhage into a hygroma or branchiogenic cyst.

Irradiation therapy should result in rather prompt decrease in size of the mass. Prognosis of treated hemangiomas is excellent. Should irradiation prove unsuccessful, hygroma and branchiogenic cyst must be considered. Here the treatment is of course surgical excision. In case of either hygroma or branchiogenic cyst, the outlook is good, providing the cyst does not become infected before it is excised.

Without going into detail or outlining the various tumors of the neck found in infants, it seems that the case must be either a cystic hygroma with hemorrhage into a cyst or an aneurysm of the carotid, internal jugular or between the two. The fact that it became tense when the baby cried does not favor one diagnosis over the other but lends more weight perhaps to aneurysm. Hygroma is more common in infants than aneurysm.

I admire the courage of the man who aspirated this mass, but the fact that it was difficult to stop the bleeding after aspiration again favors aneurysm.

In either case the diagnosis can only be made at operation, and surgery should be done without delay.

Prognosis is fair to good. However it should be guarded because of the uncertainty of diagnosis, age of the child, and complexity of the anatomy of the neck.

From the history given one is faced with the differential diagnosis of a suddenly appearing, blood containing mass in the neck of an infant. Two points in connection with the history seem worthy of comment.

First, the story of a suddenly appearing mass in an infant's neck may not always be reliable in that a slowly appearing mass is often unobserved until suddenly it is discovered. Second, on first examination the mass is said to be fluctuant while on the second examination it was said to be compressible. Which observation was most correct is of crucial importance in diagnosis. The production of true fluctuation in a mass depends upon the quality of noncompressibility of fluid in an enclosed space while compressibility when present indicates that there are avenues of escape for the fluid. In considering this case I choose to regard the observation of compressibility as more nearly the true state of affairs since the mass was observed to become tense when the baby cried.

From the information given one must suppose this mass to be an hemangioma probably of the cavenous type which had a rather rapid initial growth.

The treatment could be approached from several angles, operative resection, electrocoagulation, injection of corrosive fluids and roentgen or radium irradiation. The surgical approach is rendered difficult because of the great danger of hemorrhage and the danger to adjacent structures. Electrocoagulation if carried deeply enough to get at the base would carry danger of injury to the spinal accessory nerve. Injection of corrosive fluids has been given up rather largely because of the difficulty in controlling the destructive effects. My first choice would be radium irradiation with very careful attention to the application of the rays to the tumor mass without extensive irradiation of other structures of the neck.

Prognosis must be made with full knowledge that these tumors are apt to continue to grow and to recur and that no method of treatment will be completely satisfactory.

(The End)

IDAHO STATE MEDICAL ASSOCIATION

FORTY-NINTH ANNUAL MEETING, SUN VALLEY, JUNE 18-21.

SUN VALLEY MEETING

Instruction courses offered by members of the Idaho State Medical Association will again be a feature of the annual meeting. Following is the list of instructors and their subjects.

1. Mervyn, J. Fuendeling, Twin Falls
   Medical Management of Biliary Tract Disease.
2. D. C. McDougall, Pocatello
   Acrodynia.
3. M. B. Shaw, Boise
   Fractures About the Ankle Joint.
4. A. B. Pappenhagen, Orofino
   Traumatic Surgery.
5. Paul M. Ellis, Wallace
   Silicosis.

Full program of the meeting appeared in the May issue of Northwest Medicine.

ROLL OF HONOR

Under this heading are listed names of physicians of the state who have been called to active duty in army and navy service. Additional names will be recorded in subsequent issues as they shall be reported for that purpose.

Talbot, R. E., Lieut.-Col., Wilder
Fort Warren, Cheyenne, Wyoming
Zeschin, O. L., First Lieut., American Falls
Fort Worden, Wash.
Duncan, D. G., 1st Lieut., Council
Camp Murray, Wash.
Douglas, Wallace S., Captain, Lewiston
Fort Worden, Wash.

MEDICAL NOTES

Hospital Installs Plaque. A bronze plaque bearing the names of 43 individuals and firms who have made donations towards its construction has been installed in the lobby of the new Grangeville hospital.

State Hospital Obtains Funds. State Hospital North at Orofino has been allotted $35,000 out of a bond issue of $140,000 provided by the 1939 legislature. State Hospital South was allotted $65,000 from the same fund. Plans at Orofino include a new dormitory, assistant physicians' residence, garages and other buildings.

Iron Lung Presented at Boise. Following a two years' drive the Boise citizens have accumulated sufficient funds to purchase an iron lung for the Ada County Hospital.

Pre-school Clinics. Examination of pre-school children of Bonneville county was held May 5, 6, 7 and 8. The first three days were devoted to the examination of the Idaho Falls group and the fourth to children from rural districts.

County Attorney Rules on Hospital Argument. County Attorney M. L. Sweeley has responded to a request for ruling on establishment of a county hospital unit at Buhl. This ruling is as follows: "In view of the statute as I find it, it is my opinion that if the board of county commissioners should conclude that it was to the best interest of the county to increase the hospital facilities of the county by installing and maintaining one unit at Buhl to provide part of the increase; and that if the electors of the county, at an election held for the purpose, should see fit to approve that plan and to authorize the issuance and sale of bonds to carry out that plan, that this would be fairly within the scope of the statute."

OBITUARY

Dr. Lorin F. Rich of Rexburg, Idaho, died May 14, aged 61. He was born at Ogden, Utah, October 29, 1880. He received his medical education at Jefferson Medical College, Philadelphia, graduating in 1906.

SOCIETY MEETINGS

BONNER-BOUNDARY COUNTY MEDICAL SOCIETY

Regular meeting of the Bonner-Boundary County Medical Society was held April 5th. Election of officers was held. Fred Durose of Bonner's Ferry was elected president, and C. C. Wendell of Sand Point, secretary. Richard Bailey of Spokane read a paper on dermatological problems met in general practice.

The meeting was visited by Counsellor W. O. Clark.

NORTH IDAHO DISTRICT MEDICAL SOCIETY

Regular meeting of the North Idaho District Medical Society was held at Lewiston April 18th. Thirty members were in attendance to hear papers read by members of the Department of Health. The following delegates to the state meeting were selected: E. N. Dunn, Moscow; J. G. Wilson, Moscow; A. P. Papenhagen, Orofino; R. T. Scott, Lewiston. Alternates were: P. G. Haury, J. E. Carssow and M. C. McCrea, all of Lewiston and C. O. Armstrong of Moscow.

PROTECTION OF YOUNG CHILDREN AGAINST TETANUS NOW PRACTICAL

Combined immunization agianst tetanus and diphtheria of infants and young children is both practical and possible, John A. Bigler, M.D., and Marie Werner, S.B., Chicago, declare in *The Journal of the American Medical Association* for May 24 in a report on their observations over a two-year period of 240 children so immunized.

"Although the incidence of tetanus has steadily declined," the two authors say, "there are many reasons why active immunization against the disease would be advantageous." They point out that the rate of mortality from tetanus in the United States in 1930 was 1.1 per hundred thousand and that although children constitute less than 30 per cent of the population, 50 per cent of the deaths from tetanus were among them.

For the local Treatment of Acute Anterior **Urethritis**

(DUE TO NEISSERIA GONORRHEAE)

SILVER PICRATE* *Wyeth*

Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae.[1] An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., **23**, 201 (March), 1939.

A complete technique of treatment and literature will be sent upon request

■

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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Established by private endowment, Riverton Sanatorium is operated on a nonprofit basis.
The recently erected fifty bed hospital building is equipped for modern methods of diagnosis, medical and surgical treatment of chest diseases.
Steam-heated cottages, each with private bath, provide additional accommodations.
The facilities of the institution are available to physicians who wish to use them for the care of their private patients.

BOOK REVIEWS

NATURAL RESISTANCE AND CLINICAL MEDICINE. By David Perla, B.S., M.D., Instructor in Medicine, Columbia University College of Physicians and Surgeons; and Jessie Marmorston, B.S., M.D., Assistant in Pathology, Cornell University Medical College. 1344 pp., $10.00. Little, Brown and Company, Boston, 1941.

The authors analyze the various factors that determine or modify natural resistance and susceptibility, in relationship to their importance in general physiology. Heredity, age, sex and endocrine glands are discussed in the first four sections. Section five deals with antibodies and other cellular mechanisms in relation to resistance. Section six considers the liver, body surfaces and nervous system in resistance. Section seven discusses diet and vitamins. Sections eight and nine consider depression states and climate in relation to resistance. The last section discusses the clinical aspects of resistance.

This text possesses great value to both the physician and the surgeon. It turns to practical application results of the bacteriologist's researches. To the surgeon is given a clear conception of resistance of tissues to disease organisms. To the internist is explained the interrelationship between the forces of natural resistance and clinical medicine.

GORDON A. DODDS

SPERMATOZOA AND STERILITY. A Clinical Manual. By Abner I. Weisman, M.D. Adjunct Gynecologist Jewish Memorial Hospital, etc., New York. With 77 illustrations. 314 pp. $5.50. Paul B. Hoeber, Inc. Medical Book Department of Harper Brothers, New York, 1941.

This book is encyclopedic, including the salient points in the literature, plus the author's personal experiences and ideas. References cover the subject since interest began in ancient times. Present scientific knowledge is reviewed and practical applications in everyday practice given. Technics for studying sterility and overcoming difficulties are given in detail. Technics of artificial insemination with legal matters to be considered are covered to the extent of making it seem too simple, but still a major medical procedure. The medicolegal side, identification of semen, tests for sterility and fertility are all covered.

Frequently there is a tendency to make some examinations unduly elaborate. Condom semen specimens are condemned as unreliable. Methods for obtaining semen are advised that would offend some peoples' aesthetic sense, even though it be for the benefit of science. Whether one has to do with sterility in his practice or not, the book makes most interesting reading as a story of scientific advancement. It is too technical for the layman, however.

W. R. JONES

CLINICAL PELLAGRA. By Seale Harris, M.D. Professor Emeritus Medicine, University of Alabama, Birmingham. Assisted by Seale Harris, Jr., Formerly Assistant Professor of Medicine, Vanderbilt University, Birmingham, Alabama. Illustrated. 494 pp., $7. The C. V. Mosby Co., St. Louis,

The present volume is the result of labors of the editors in collaboration with nine physicians of eminence in the field of nutritional disturbances. The author asks, "Granting that deficiency of nicotinic acid is the essential factor in the production of pellagra, what are the underlying causes of this type of avitaminosis?" He contends there are two factors, exogenous and endogenous. The exogenous are (a) deficiency in nicotinic acid in the diet, and (b) prolonged ingestion of toxins or symptom-producing organisms over long periods of time which cause gastrointestinal and liver insufficiencies which prevent the storage and utilization of nicotinic acid. The endogenous factors, on the other hand, are disturbances, essentially functional in nature, of the gastrointestinal tract and liver.

The author reaches the conclusion that not only pellagra but also pernicious anemia and sprue are allied nutritional diseases in which liver pathology, usually fatty degeneration, is an almost constant finding, in all of which liver therapy is of special benefit. For specific therapy, nicotinic acid, liver and dietary management are well presented. Detailed diets are given for handling various phases of the pellagra problem.

HOMER WHEELON

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE. Edited by Philip Bard, Professor of Physiology, Johns Hopkins University School of Medicine. With the Collaboration of Professors of Physiology in Nine other Universities. Ninth Edition. 1256 pp., $10. The C. V. Mosby Co., St. Louis, 1941.

In reviewing this excellent book, one is tempted to exhort every physician to read it. It is the study of physiology that gives one the governing principles of clinical medicine. Many diseases are purely disturbances of function, and those dominantly of structural changes are both managed and treated intelligently, only by understanding physiology.

The major chapters are given to neuromuscular mechanism, peripheral, central and autonomic nervous systems, and comprise about twenty-five per cent of the text. This is the field in which there is the greatest interest, the least known and most original work.

There is a new chapter on the enzymes. Each organic substance metabolized has a specific enzyme, and there is not much known yet of these biologic catalysts. Here is one of the growing points of medicine. The book serves well in giving us, from a greatly increasing volume of physiologic literature, guidance to the clinical application of physiology and biochemistry.

PAUL WHELAN

THE MASK OF SANITY. An attempt to Reinterpret the So-called Psychopathic Personality. By Hervey Cleckley, B.S., B.A. (Oxon.), M.D., Professor of Neuropsychiatry, University of Georgia School of Medicine, Augusta. 298 pp, $3. The C. V. Mosby Co., St. Louis, 1941.

This is one of the most interesting books on a psychiatric subject that has appeared for a long time. The condition described and discussed is that of constitutional psychopathic inferiority, that group of borderline cases comprising petty criminals, firebugs, kleptomaniacs, some chronic alcoholics, sex perverts, check writers and forgers.

The law holds these people accountable for their misdeeds while the relatives can testify as to their mental irresponsibility. They repeat over and over small offenses that apparently are pointless and are in and out of jails and psychopathic wards all their lives, acting and talking normally when under observation. The condition is considered by some to be moral deficiency like feeblemindedness is a mental deficiency. There is no sense of responsibility, no profiting by experience, and no true regard as to whether they hurt themselves or others by their actions. When they want to they can assume the mask of sanity. There are some very interesting case reports written in excellent descriptive style.

LEMERE.

NORTHWEST MEDICINE

JOURNAL OF OREGON STATE MEDICAL SOCIETY, WASHINGTON STATE MEDICAL ASSOCIATION
AND IDAHO STATE MEDICAL ASSOCIATION
ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION
Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879.
Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 8, 1917, authorized July 31, 1918.

Vol. 40, No. 7 JULY, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Reprints will be furnished by the printer according to the schedule of prices which accompanies the galley proofs submitted to the author. The order for reprints should accompany the returned galley proofs. The printer holds the type until the first of the following month.

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EDITORIALS

OUR GREATEST MEDICAL MEETING

At the annual gatherings of the American Medical Association are regularly assembled record masses of physicians. Last month at Cleveland this rule was followed. Over 7000 registrants appeared, representing all states. From the Pacific Northwest were registered thirty-five representatives from Washington, twenty-four from Oregon and six from Idaho. Naturally the total was increased extensively from the home state, Ohio. Visitors reserved the hotel capacity of the city and late comers were assigned to a boat on the lake, not desirable but endured by necessity. The Cleveland Civic Auditorium is ideal for such a meeting with abundant space for exhibits and nearly all section meetings housed under the same roof.

Commercial and scientific exhibits have been developed to such prodigious proportions that they constitute by themselves an adequate basis for a great medical meeting. Much rational and instructive information was offered relative to numerous medicinal preparations, familiar to the profession by name only, with little personal knowledge as to composition and production which were herewith clarified. Not alone were mysteries of pharmaceuticals explained but here were demonstrated the latest technical appliances, medical and surgical equipment and most modern roentgen developments. The benefits and importance of dairy products and foods were exemplified, with emphasis, naturally, on their respective vitamin and other nourishing ingredients.

The amazing mutiplicity and complexity of scientific exhibits offered at this meeting were bewildering. One might profitably spend his time digesting material presented bearing on his specialty. The exhibit to which most space was assigned was "lame back" sponsored by the A. M. A. Booths were devoted to anatomy, diagnosis and various forms of treatment, each attended by a series of rotating demonstrators. The attitudes of certain among the numerous spectators suggested they might be afflicted by the disease under consideration. The second largest space was occupied by the customary applications of plaster in treatment of fractures according to most advanced methods.

Much interest centered about the process of mass production of plasma, the technic of all steps being carried out by members of the research department of Baylor University. Though the plasma was derived from bullock blood, details were conducted exactly as with the human. One might easily envision the tremendous possibilities of this procedure and its applications both under civil and war conditions. Many other examples could be cited, illustrating the progress of new developments designed to relieve ailments of mankind. Moving pictures continue to be the most illustrative of all demonstrations. Presented in natural colors, the surgical operation is a vivid reality. These were applied to amplify numerous exhibits and always had attentive audiences.

Among the most profitable exhibits were those of the book publishers, by which one is enabled personally to inspect and compare productions of established and reliable publishing houses. One cannot but regret that his ambitions for medical litterary gratification must be limited by the size of his purse. An attractive exhibit was arranged by the Cooperative Medical Advertising Bureau, presenting all the state medical journals in a form so pleasing as to attract numerous visitors, many of whom were not familiar with the manifold variety of these publications.

Since the public is avid to accept discoveries of medical miracle workers, energetic reporters are eager to feature anything of striking novelty appearing before such a meeting. Accordingly the papers announced with assurance certain startling new procedures, among them that high blood pressure can be reduced by administration of a preparation derived from the kidney and tuberculosis can be prevented by suitable prophylactic medical treatment. These and other equally amazing predictions may be accomplished in the future.

Scientific papers were read before all sections on important subjects too numerous to be listed in this report. A noticeable fact was the large attendance at all sessions. Progress in medical discoveries and developments was announced at this annual meeting that will affect the practice of all physicians. One cannot hope personally to hear the reading of many papers but must select those in which he is most interested, awaiting publication of all in due time, when he may have opportunity of reading them at leisure.

At all such assemblies social activities are a prominent feature. Dinners of colleges, fraternities and other organizations bring together friends in close relations that cannot otherwise be duplicated. The climax of events is the president's reception and ball, long to be remembered by those privileged to attend. This Cleveland meeting will be rated as memorable in the history of the American Medical Association.

IS PRACTICE OF MEDICINE A TRADE OR PROFESSION?

From time immemorial medical practice has been recognized as a profession and this has never been questioned until on December 20, 1938, United States government officials filed an indictment charging American Medical Association, Medical Society of District of Columbia et al. with conspiring for the purpose of restraining trade in the District of Columbia in violation of the Sherman Antitrust Act. Following a series of arguments, demurrers, court decisions and petitions, the defendants were required to go to trial in the District Court of the United States at Washington, D. C., which began before a jury on February 9, 1941, continuing until April 4. The jury found the two corporations guilty as charged of combining and conspiring to restrain trade in District of Columbia, at the same time acquitting all other defendants, most of whom were members of these organizations. On May 29 the Court entered judgment on the verdicts and assessed a fine of $2500 against the A.M.A. and $1500 against Medical Society of District of Columbia.

The American Medical Association took the blow on the chin, standing up, and will continue to fight to maintain its independence and sustain the historical recognition of the profession of medicine. Its decision to appeal the verdict rendered against it is based on errors in many rulings of the Court, some of which were the following:

"Refusal of the Court to permit defendants to prove that Group Health Association, a membership corporation not for profit, received subsidies from Home Owners Loan Corporation and others;

"Refusal to permit defendants to prove coercion to require government department employes to join Group Health Association;

"Refusal to permit defendants to prove that Group Health Association was guilty of advertising for and soliciting of members;

"Refusal to permit defendants to prove they had been advised that Group Health Association was illegally practicing medicine and engaged in operation of an insurance company contrary to law;

"Denying motions of defendants to set aside the verdict of the jury finding the two corporations guilty, when said jury had found all the alleged agents of the corporations not guilty."

It has been suggested that there is a chance that the Supreme Court of the United States may reverse the previous ruling of the Court of Appeals that practice of medicine is a trade or hold that the defendants are in the same class as labor unions and not subject to provisions of the Sherman Antitrust Law. It may hold that evidence failed to show that defendants combined and conspired to restrain trade. Many interesting and suggestive speculations have been offered by counsel of American Medical Association relative to the ultimate effects on medical practice, if this verdict is not set aside. Hence every member of the medical profession is vitally concerned as to the final disposition of this controversy and will await with keen interest reports of further action pertaining to it.

THE SUN VALLEY MEETING

When Sun Valley was chosen as the permanent meeting place for Idaho State Medical Association, it selected an unusual and charming setting for their medical gathering. Here is a compact valley, surrounded by mountains 6,000 feet above sea level, with sunshine to temper midday temperature and assurance of cool nights. Summer outdoor skating and warm water bathing offer unusual attractions, supplemented by golf, hiking and contemplation of nature's grandeur. Accommodations are ample to care for attendance by the Idaho Association members and their friends, even with the presence of one or more other special gatherings.

The large hotel, Sun Valley Lodge, provided amply for commercial and scientific exhibits adjacent to the assembly hall, with rooms on the second floor for meetings of the instruction courses. Guest speakers from the faculty of Stanford University, whose names and photographs have already been published in this journal, presented papers bearing on the latest advances in many lines of different branches of medical practice, all of which were received by attentive audiences. Since the program was restricted to two addresses at each morning and afternoon session, one was not burdened by literary indigestion. A good audience greeted each speaker since this program was not subject to interference by other attractions.

Last year officials of the State Association decided that the program would be made more attractive by participation on the part of some of its members. Accordingly, "instruction courses" were introduced. The instructors at this meeting were Myron J. Fuendeling of Twin Falls, D. C. McDougall of Pocatello, M. B. Shaw of Boise, A. B. Pappenhagen of Orofino and Paul M. Ellis of Wallace, who presented papers on gallbladder diseases, pediatrics, fractures, traumatic surgery and silicosis, each of which was subject to discussion by those in attendance. It was agreed that this feature was worthwhile and will be followed in future meetings.

One important feature of the state meeting is the opportunity for social contacts and renewing of friendships among those who rarely meet except on these occasions. The important social feature is the annual banquet and dinner dance which was attended by about one hundred members and their wives. The speakers for this occasion were William Dock and Maurice Tainter representing the guest speakers, with C. W. Pond as master of ceremonies. This meeting was one which will be remembered by all those privileged to attend.

THE WASHINGTON PROGRAM

In former years it was the universal custom for a state medical association to prepare a program for its annual meeting featuring papers by its members. In course of time it became customary to supplement these papers by presentations from guest speakers secured from various parts of the country. In time certain state organizations expanded this plan to the extent of presenting a program of papers provided exclusively by visitors from other cities. Since this plan did not seem to meet with universal favor, it has become quite common to prepare a program including papers both by guest speakers and members of the state association.

During recent years Washington State Medical Association has followed the latter plan. For its annual meeting next month at Seattle, however, there has been a reversion to the original procedure of years ago. As will be noted in the program in the Washington section of this issue, papers will be read exclusively by members of the organization. The plan adopted is somewhat novel. During morning sessions formal papers will be presented. In the afternoon there will be section meetings on several specialties, during which certain subjects will be introduced by the chairman with an opportunity for discussion by all members interested in this particular line of practice. The outcome of this new feature will be watched with much interest for determination whether or not it will be pursued in the future.

Entertainment for this meeting offers something new. The usual golf tournament will be conducted, and in addition a fishermen's derby has been set. If one has never had the thrill of landing a big fish on the end of a line, he will have the opportunity of this venture on Elliott Bay, where he may have the good fortune to capture a good sized salmon. It will be noted that prizes await victors in both the golf tournament and the fishing derby. The ladies have become so enthused over this form of entertainment that the Woman's Auxiliary likewise schedules a parallel golf tournament and fishing derby. A cordial invitation is extended to physicians in adjacent states to attend this Seattle meeting, being assured that they will have enjoyable experiences which may be retained in future memories.

THE DOCTOR'S CAR

The Automobile Manufacturers Association in its bulletin *Automobile Facts* for June reports a recent survey of physicians' use of automobiles. Doctors, according to this survey, drive more miles per year than any other group except traveling salesmen, the average being nearly thirteen thousand miles. Doctors make more round trips than any other group, averaging nearly a thousand annually. Ninety per cent of the number of trips are described as being for professional use, while sixty-six per cent of total mileage is reported as for necessity purposes. In rural areas half of the professional trips of physicians average more than fifteen miles, while in the cities four out of ten physicians average the same or more.

In comparison the report states that annual mileage of traveling salesmen runs slightly less than nineteen thousand miles, while farmers drive their cars less than six thousand. Farmers make three hundred ninety-two necessity trips per year, while doctors make nine hundred forty-seven. Both maintain the same percentage of total mileage devoted to necessity trips, namely, sixty-six per cent. Physicians average forty miles in pleasure trips, while the general average of professional trips is ten miles.

Finally, physicians tend to trade in their cars more frequently than most groups. Eighty-nine per cent of the group surveyed drove cars less than five years old and one-third owned cars a year or less in age.

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ORIGINAL ARTICLES

INTERSTITIAL CYSTITIS[*]

O. A. Nelson, M.D.
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The clinical entity which we shall designate as interstitial cystitis has been described under many different titles. Such confusion in terminology is explained by the fact that various observers have classified the disease from different standpoints: from those of symptoms, cystoscopic findings, pathology and histology. Therefore, the following synonyms for interstitial cystitis exist in the literature: elusive ulcer, irritable female bladder, cystitis parenchymatosa, paracystitis, ulcerative cystitis, circumscribed panmural cystitis, ulcus simplex, panmural fibrosis, localized submucous fibrosis, Hunner's ulcer, bladder fissure, submucous ulcer, submucous cystitis, localized myositis of the bladder wall.

It is described by Dorland as, "a myositic ulcer occurring in the dome or vertex of the bladder wall, with normal cell infiltration."

HISTORY

History of this disease extends back to 1836, when Mercier[1] called attention to ulcers in the bladder. In 1870 a similar report was made by Tait.[2] The term interstitial cystitis was probably first used by Skene[3] in 1887. Nitze[4] in 1907 used the term cystitis parenchymatosa. It was not, however, until Hunner[5] had presented his exhaustive paper on elusive ulcer in 1914 that the disease was recognized as a distinct clinical and pathologic entity. Cullen[6] advocated the term elusive ulcer on the basis of difficulty in locating lesions. Paracystitis was proposed by Geraghty;[7] and Keene[8] suggested the more comprehensive term, circumscribed panmural ulcerative cystitis. The Mayo Clinic group have used panmural fibrosis and submucous ulcer interchangeably. Herbst and Baumrucker[9] suggested the term bladder fissure because there is not a true ulcer and because there is great similarity to rectal fissure. In 1929 Paschkis[10] suggested ulcus simplex. Before Hunner's report, the term irritable female bladder had been used by many to describe miscellaneous cases where the signs and symptoms were entirely out of proportion to the pathologic findings.

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[*] Read in abstract at the annual meeting, Seattle Surgical Society, Seattle, Washington, Feb. 1, 1941.

1. Mercier, L.-A. Sec. No. 26: Mémoire sur certaines perforations spontanées de la vessie non décrites jusqu'â ce jour. Gaz. méd. de Par. 1836, 2d.s. 4:257-273; also ibid., 847.

2. Tait, L.: On the cure of the chronic perforating ulcer of the bladder by the formation of an artificial vesico-vaginal fistula. Lancet. (London) 54:738. 1870.

3. Skene, A. J. C.: Clinical observations on cystitis in women. Proc. M. Soc. County Kings, Brooklyn, 7:151-158, 1882.

4. Nitze: Lehrbuch der Kystoskopie; ihre Technik und klinische Bedeutung. (Wiesb.) 1907.

5. Hunner, G. L.: A rare type of bladder ulcer in women. Report of cases. Tr. South. Surg. & Gynec. Assn., 27:247-292, 1914.

6. Cited by Bumpus, J. Urol. 5:249-253. March, 1921.

7. Geraghty, J. T.: Infections of the bladder with special reference to localized resistant areas of cystitis. Surg. Gyn. & Obst. 24:655-658, June, 1917.

8. Keene, F. E.: Circumscribed panmural ulcerative cystitis, elusive ulcer (Hunner). Annals of Surgery, 71:479-485, April, 1920.

Following the 1914 Hunner report, interstitial cystitis was recognized and described by Kretschmer,[11] Meisser and Bumpus,[12] Hinman,[13] Furniss,[14] Hughes,[15] Peterson and Hager,[16] Folsom,[17] Higgins,[18] Fowler,[19] Eisenstaedt and MacDougall,[20] Meads,[21] Dodson,[22] and Hunt.[23] These clinicians have contributed much to diagnosis and treatment of this disease.

ETIOLOGY

It is well to remember that nothing specific has been proven as the etiologic factor in interstitial cystitis. We shall briefly cite those theories, suggestions and experiments which have been advanced and which seem most plausible.

As to sex, the ratio of women to men is four to one. According to the literature, patients may range from eighteen to seventy-seven years of age. Childbearing does not seem to be an etiologically significant point, as most of the patients have passed the period of active sex life. Social status has no bearing on the prevalence of the disease. No typical cases have been observed to follow gonorrhea, pelvic operations, catheterization, or pregnancy and labor.

Hunner contends that 50 per cent to 60 per cent of the patients suffering from the disease have a coexisting ureteral stricture or some dormant renal infection. The pH of the urine bears no relation to the disease. No ulcers have been seen in a typical neurogenic bladder.

Rosenow[24] and Meisser[12] declare that certain strains of streptococci have a selective affinity for the bladder wall, and contend that focal infection plays a major part in causation of this disease. They have secured culture of streptococci from abscessed teeth of patients suffering from interstitial cystitis and after inoculating teeth of animals with the bacterial suspension have observed development of interstitial cystitis in these animals. Similar results were obtained when they injected rabbits intravenously with streptococci from a dental abscess in a patient suffering from interstitial cystitis. Nevertheless, most authors disagree on validity of the hematogenous route of infection or even on proof presented in its support.

PATHOLOGY

The bladder wall is thick as a result of fibrous tissue replacement. Peritoneum adjacent to the ulcer is thickened, and musculature is hypertrophied. Capillaries in that region are many, and stuffed with leucocytes. Marked vascular and perivascular polynuclear invasion affects the blood vessels so that in many instances a leucocytic thrombus is seen and a leucocytic involvement of the coats is such that one might speak of an acute exudative arteritis and phlebitis. Lymph channels are likewise affected. Cellular infiltration includes plasma cells, lymphoid cells, small round cells and polymorphonuclear cells.

DIAGNOSIS

Symptoms and findings in interstitial cystitis are so distinctive that the diagnosis can, in the majority of instances, be made if the physician knows the history, gross appearance of the urine and bladder capacity. Frequency of urination, suprapubic pain and clear appearing urine are the usual findings. If the physician then finds the bladder capacity small it is practically certain that the patient suffers from interstitial cystitis. Nevertheless, after local bladder treatments the urine may be cloudy from products of infection.

Frequency of urination may vary from day to day, but is present both night and day. Frequency does not always bear direct relation to bladder capacity but when the patient must void every ten or fifteen minutes, the bladder capacity will usually be found small, varying from thirty to ninety cubic centimeters. Many of these sufferers assert that the frequency is much worse when they are on mental tension and they are, in consequence, sometimes labeled neurotics.

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[9] Herbst, R. H., Baumrucker, G. O. and German, K. L.: Elusive ulcer (Hunner) of bladder with experimental study of etiology. Am. J. Surg., 38:152-167, Oct., 1937.

[10] Paschkis, Rudolf.: Nonspecific chronic ulcers of bladder. Urol. & Cut. Rev. 33:217-19, April, 1929.

[11] Kretschmer, H. L.: Surgical treatment of so-called elusive ulcer of bladder. J. A. M. A., 76:990, April 9, 1921.

[12] Meisser, J. G. and Bumpus, H. C., Jr.: Focal infections in relation to submucous ulcer of bladder and cystitis. J. Urol., 6:285-298, October, 1921.

[13] Hinman, F.: (Discussion), J. Urol., 6:299-301, 1921.

[14] Furniss, H. D.: Fulguration of Hunner ulcers. Am. J. Obst. & Gynec., 7:288-291, March, 1924.

[15] Hughes, T. J.: Sub-mucous ulcer of the bladder; report of cases treated by excision. Virginia M. Monthly, 49: 202, July, 1922.

[16] Peterson, A. and Hager, B. H.: Interstitial cystitis; cases. Calif. & West. Med., 31:262-267, Oct., 1929.

[17] Folsom, A. I.: Hunner's ulcer. Texas State J. Med., 27:718-21, Feb., 1932.

[18] Higgins, C. C.: Hunner ulcer of the bladder; report of 38 cases. Urol. & Cut. Sec. No. 10. Rev., 34: 665-668, Oct., 1930.

[19] Fowler, H. A.: Ulcer of the bladder (Hunner type). J. A. M .A., 75:1480-3, Nov. 27, 1920.

[20] Eisenstaedt, J. S. and MacDougall, T. G.: Rupture of bladder through Hunner ulcer-bearing area; calculus in ureter and urinary fistula. Am. J. Surg., 14:477-479, Nov., 1931.

[21] Meads, A. M.: Hunner ulcer. Urol. & Cut. Sec. No. 10. Rev., 38:631-4, Sept., 1934.

[22] Dodson, A. I.: Hunner's ulcer of the bladder. Virginia M. Monthly, 53:305-310. August, 1926.

[23] Hunt, V. C.: Submucous ulcer of bladder and its surgical treatment. Minnesota Med., 4:703-707, Dec., 1921.

[24] Rosenow, E. C.: Elective localization of streptococci. J. A. M. A., 65:1687-1691, 1915.

Suprapubic pain is usually sharp and lancinating. It is brought on and intensified by bladder distension. It may be local over the bladder or may radiate into the pelvis, lower abdomen or back, thereby confusing the clinical picture.

Finding a patient with severe pain referred to the abdomen and pelvis and urine normal to laboratory examination, the clinician may be misled into believing he is dealing with disease extrinsic to the urinary tract unless he is aware of the evasiveness of the clinical syndromes of interstitial cystitis. Measuring the bladder capacity will usually put him right.

Submucosal fibrosis prevents normal vesical expansion. At times the bladder cannot be dilated even with the patient under profound anesthesia. Sometimes the capacity is less than two ounces. Reduced bladder capacity is such a constant finding in interstitial cystitis that the surgeon should make an inviolate rule never to operate for pelvic or abdominal conditions, when the patient has frequency, until the bladder capacity has been measured. Sooner or later, the surgeon following this rule will find it a diagnostic protection, as interstitial cystitis and other diseases within the pelvis or abdomen may be concomitant.

Although the urine is usually sparkling clear in the presence of interstitial cystitis, laboratory examination usually reveals a few leucocytes and a few red blood cells; at times there will be gross hematuria. Organisms are not present unless there is also infection present. If the bladder urine contains evidence of infection, the upper urinary tract must, of course, be studied before a diagnosis can be made. We have noted that practically all men suffering from interstitial cystitis have pyogenic infection of the prostate and seminal vesicles.

CYSTOSCOPIC APPEARANCE

When other findings leave the clinician in doubt as to the diagnosis, cystoscopic examination should be done. It will give information as to the presence or absence of trigonitis, urethritis or other conditions causing vesical disturbance as well as of ulcers.

Cystoscopic appearance of the ulcer varies with the stage of disease and is altered by treatment. In some instances the lesion appears as an abnormal redness of the bladder wall or a convergence of blood vessels. In others the ulcer is cicatrized so that it appears indurated with irregular extensions. Distension of the bladder causes a break in the mucosa and bleeding at site of the ulcer, a condition that is of diagnostic value and serves as a guide for treatment by fulguration.

TREATMENT

Although there is no specific treatment for interstitial cystitis, the suffering can practically always be relieved. At times it may yield to office treatment carried out by the physician or his nurse; at other times it requires more heroic measures. There are a few instances in which nothing short of diverting the urinary stream will relieve the patient of the severe pain present on slight bladder distension.

Soon after Hunner's excellent paper many patients suffering from this disease were subjected to resection of the ulcer. However, it was found that the ulcer usually reappeared in some other portion of the bladder. Nevertheless, Folsom[25] has recently operated on several patients, removing practically all the mobile portion of the bladder. He contends that he gets good results and that the reformed bladder does not have the disease.

Neoarsphenamine given intravenously enjoyed a favorable reputation for a short time. We used it for several months in eight patients but found no definite change in their condition other than the oscillation of symptoms so characteristic of this disease.

The early lesion with mild symptoms, however, will respond quite satisfactorily to treatment by solution of silver nitrate. These treatments are simple and can be carried out by any physician or his office nurse. Silver nitrate has long been used for various types of bladder conditions. As early as 1855 Mercier[26] recorded the excellent results he obtained; and from his description it seems likely that at least some of his patients suffered from interstitial cystitis.

Dodson[22] in 1926 recommended a method of using silver nitrate which we have employed with quite satisfactory results:

> The patient is placed on the treatment table. After the bladder is emptied by a catheter, it is irrigated with sterile water. Then about four cc. of ¼ per cent solution of silver nitrate is injected into the bladder. Catheter is then clamped until the patient is aware of a smarting and burning sensation in the bladder (usually from five to eight minutes). Then the silver nitrate solution is evacuated, and the bladder again washed with sterile water. About five or six cc.

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[25] Folsom, A. I., O'Brien, H. A. and Caldwell, G. T.: Subtotal cystectomy in the treatment of Hunner ulcer. J. Urol., 44:650-666, November, 1940.

[26] Mercier, L.-A.: Mémoire sur le traitement du catarrhe vésical par les injections de nitrates d'argent concentrées. Gaz. hebd. de méd. Par., ii:588-619, 1855.

of nupercaine solution, one to five hundred, is then injected into the bladder, and the catheter withdrawn. Patient is advised to retain the nupercaine solution as long as possible.

If the patient tolerates these treatments, strength of the silver solution may be increased gradually up to 2 per cent. These treatments should be given at least twice a week at first; when the patient is quite comfortable the intervals may be increased to one week and later to two weeks. If progress is satisfactory, it is well to continue treatments for several weeks after symptoms have disappeared.

Patients having concomitant pyogenic infections must be treated for the infections. If there is considerable cicatrization of the ulcers, the silver nitrate treatment is often ineffective. Under such circumstances, fulguration and hydraulic dilatation usually give quite satisfactory relief. Such treatment must be carried out under rather profound anesthesia; otherwise the treatments are likely to be incomplete and results unsatisfactory. Fulguration must be thorough and extend well beyond the margin of each ulcer. Overdistension, or intensive fulguration of any one area is dangerous and so is fulguration while the bladder wall is thinned by distension. In either case, perforation and extravasation are likely to occur. Repeated fulguration and distension at intervals of three to four weeks may be necessary to bring about satisfactory results.

The prognosis is uncertain as to permanency of results, from either silver nitrate or fulguration. Recurrence is frequent but usually milder than the primary attack.

Finally, patients failing to get relief from the more conservative procedures and suffering intensely should, if possible, have ureterointestinal anastomosis. Such operations, when performed for interstitial cystitis, do not carry so high a mortality rate as when done for carcinoma of the bladder or urethra, as cystectomy is not necessary. The results are usually very good.

PNEUMONIA IS CONTAGIOUS

Additional evidence that pneumonia is a contagious disease and that all patients with it should be strictly isolated, even during convalescence, is presented in *The Journal of the American Medical Association* for June 7 by Sydney S. Gellis, M.D., and A. Graeme Mitchell, M.D., Cincinnati.

"Nine instances of cross infection with type I pneumococcus occurred in November and December of 1939 during a period of two weeks in the pediatric (diseases of children) service of the Cincinnati General Hospital," the two physicians say. "All the children, with one exception, were between the ages of 2 and 3 years."

COXA PLANA*

DONALD B. SLOCUM, M.D.
EUGENE, ORE.

In 1909 Legg first called attention to coxa plana as an entity, and led the way to its differentiation from tuberculosis and other conditions of the hip joint. Shortly, other pioneers, Sourdat, Calvé, Waldenström and Perthe, working independently, presented papers on the same subject. Early reports were concerned with description of the disease and classification of clinical and roentgenographic findings. Later, larger series of cases began to appear with early end-results. The present discussion is presented in an effort to correlate the clinical picture in the active stages with late end-results and to evaluate the effect of treatment in these cases.

ETIOLOGY

The present etiologic concepts of coxa plana comprise a varied and somewhat nebulous group:

1. The traumatic theory was first advanced by Legg in his original paper in 1909. Repeated minimal traumata as suggested by greater frequency of the disease in boys than in girls, or less frequently direct injury may be responsible. Whether there are secondary or exciting factors acting on a hip with a predisposition to the disease is conjectural.

2. The infectious theory has been based on a few scattered cases, in which biopsy has been done during the active stage of the disease with recovery of tissue suggesting inflammatory changes. Legg, Kidner, Phemister and McWhorter have secured positive cultures. Key has suggested that streptococcus viridans may have been responsible for a number of these cases and subsequently been rendered avirulent and sterile. These findings are suggestive of the bacterial origin of the disease, but as yet are too few to attain great etiologic significance.

3. The developmental theory of Jansen is based on the assumption that lateral displacement of the head on the neck, insufficient to tear the vessels of the liagmentum teres but sufficient to close the veins and lymph channels, is responsible for development of coxa plana. Two conditions are necessary: the horizontal position of the growth disc, and a space between the mesial edge of the neck and hip socket, even when the head is in contact with the socket floor. Developmental acetabular deformities pertinent to the disease are an acetabular floor which is too thick, or a medial deviation of the ischium.

4. The endocrine system, particularly hypothyroidism, has frequently been mentioned as an etio-

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*From the Willis C. Campbell Clinic, Memphis, Tenn.

logic factor, while occasional occurrence in Frölich's syndrome is suggestive.

5. A case of coxa plana in father and son suggests an hereditary element.

The relatively benign nature of coxa plana has led to but scant pathologic material. The primary process, however, is generally believed to be an aseptic necrosis of the femoral head, with subsequent changes in the articular cartilage, epiphysis, epiphyseal plate and femoral neck. Excellent descriptions of the gross and microscopic pathology are found in the writings of Lippman, Zemansky and Pick.

In the present series, eighty-six cases have been seen in the active phase of the disease, five being bilateral. In addition, ten cases were seen in the final stage which were not used in the present study. Age ranged from two and one-half years to fifteen years, the average being 8.21 years; 78.58 per cent were males and 21.42 per cent females, a ratio of 4:1.

Within six months before the onset of symptoms, twenty cases gave a definite history of trauma, twenty-four gave history of tonsillitis, four severe sore throats, three pneumonia, two arthritis, one scarlet fever, one mumps and whooping cough, one inguinal abscess, one otitis media and one acute mastoiditis. In addition, one case had definite rickets treated seven years previous to admission and in a definite arrested stage at the first admission, and two cases had osteomyelitis which had been first treated two and four and one-half years respectively before admission for coxa plana.

The entrance complaints of seventy-four patients entering the clinic were given either singly or in combination as follows: pain in hip fifty-one cases, limp sixty-seven, stiffness nine, pain in knee six, night cries six, low grade fever three, flexion contracture of the hip one, shortening one, weakness one, swelling one. Pain, limp and stiffness were the most frequent combination of symptoms. It is rather interesting to note that the incidence of pain, 68.92 per cent, is considerably higher than that reported by most authors. On initial physical examination twenty-eight cases had atrophy, fifty-six limp, thirty-four shortening, the greatest measurable shortening being three-fourths inch, eighteen pain on motion, eighteen marked muscle spasm, although most cases had slight spasm.

Motion was generally good in flexion and extension, slightly limited in adduction, and usually more markedly restricted in abduction, internal rotation and external rotation.

ROENTGENOLOGIC CHANGES

The most striking changes are the alterations in form and structure as brought to light by roentgenogram. It was this finding that first captured attenion of the earlier observers, and aided them in differentiating the disease from tuberculosis and other diseases with which it was confused in the preroentgen era. Although a few observers have noted development of symptoms before a positive roentgenogram, the general experience has been that the patient has entered with a history of symptoms dating back several months and on entrance examination, has presented pathognomonic roentgen criteria. True, there is frequently the opportunity for question in diagnosis in very early cases, and reliance must often be placed in the tuberculin test and to a lesser extent the Wassermann reaction. Of the radiographic findings, the most striking are found in the femoral head, but no less noteworthy are alterations in the femoral neck and acetabulum for these have repeatedly been the basis of etiologic conjecture and discussion.

In the present discussion, the following classification will be used:

STAGE OF ACTIVITY

Stage of condensation, average duration 13.635 months.

Stage of fragmentation, average duration 8.90 months.

Stage of healing, average duration 9.36 months.

Average duration of disease through stage of healing, 31.895 months.

END-RESULT STAGE

This classification does not differ materially from those presented by Waldenström, Legg and others and is thought to be a convenient, well standardized method of approach. Patients were seen on original admission in all phases of the disease.

The roentgenographic signs seen early in the disease, in order of appearance, are: (1) Rarefication of the anterolateral portion of the femoral head. (2) Widening of the joint space, a differential point from tuberculosis, average 0.31 cm. (3) Condensation of the femoral head. (4) Slight widening and flattening of femoral head. (5) Early cavitation of femoral neck (may or may not be present).

Later signs of coxa plana are: (1) Further condensation of femoral head. (2) Widening of epiphysis, average 1.384 cm., greatest 7.5 cm. (3) Widening of epiphyseal plate. average 0.7216 cm. (4) Ischium varum, average increase of medial deviation of ischium 5.23°. (5) Increased upward deviation of acetabular roof, average 3.71°. (6)

Irregularity and haziness of bony acetabulum. (7) Increase in metaphyseal cavitation (when present). (8) Progressive shortening of femoral neck, average 1.1 cm., greatest 2.5 cm. (one case revealed 1.7 cm. lengthening). (9) Rarefication and coalescence of fragmented epiphysis. (10) Decrease in breadth of epiphyseal line. (11) Further molding of head and acetabulum. (12) Healing with reappearance of normal lamellar structure. (13) Coxa vara, i.e., decrease in the shaft neck angle is not usually present, apparent coxa vara being caused by the medial overflow of the bony epiphysis. (14) Femoral head frequently becomes displaced upward and laterally in the acetabulum.

TREATMENT IN THE ACTIVE PHASE

The nature of coxa plana is such that the end-result is invariably toward spontaneous recovery. Objectives of treatment, therefore, are directed toward comfort of the patient and for an anatomically more perfect end-result. There is considerable controversy concerning the efficiency of any treatment in the ultimate end. Legg and Waldenström believe that treatment had little, if any, influence on the final form of the femoral head. This view is not taken by most authors, however. Indeed, the comfort of the patient and an effort to prevent deformity of the femoral head should be the prime motives in the rational treatment of this disease.

The objectives of treatment are:

1. In the acute or early stages, muscle spasm and tendency to deformity should be corrected.
2. Prevention of broadening and flattening of the capital epiphysis, which may follow weight bearing or action of the powerful muscles of the hip joint.
3. Correction and prevention of adduction deformity in the later stages.
4. A general health building program and elimination of such conditions as tuberculosis, endocrine disturbances, septic foci and toxemia which, although not directly related to coxa plana, may possibly be contributory.

In the present study those cases which presented themselves with signs of joint irritability, such as spasm and limitation of motion, were put on a Bradford frame with Buck's extension, the hip being placed in moderate abduction. While this is a satisfactory method of treatment, often accompanied by excellent results, the treatment by recumbency and traction gives better clinical and roentgenographic results. In cases with only slight signs of hip joint involvement, such as slight limp or mild pain, the patient was put to bed with or without traction until the stage of healing and then allowed to walk with a Thomas caliper or Bradford abduction brace. In some cases seen before 1930, braces alone were used, a form of treatment no longer considered adequate.

In cases in which the deformity is already well advanced, relief from weight bearing will have little, if any, influence on the final form of the head. Indication for braces in this latter stage is to prevent adduction contracture and to prevent any further damage to articular cartilage on its softened subchondral bony support. At this time, too, if there are fixed adduction contractures, they should be corrected by tenotomy or, if possible, conservative measures. All in all, it seems as though there are fewer poor anatomic results if the hip is protected.

The time for cessation of bed rest and removal of braces is in the stage of healing. Some authors remove braces as soon as the patient is pain-free. Usually this occurs some time late in the stage of fragmentation, when the reorganization process is well under way. In many instances, particularly in private practice where there is a definite economic load, the patient will no longer return after this stage for completion of treatment. Naturally, if healing is well enough advanced, the patient will receive no ill effects. If, on the other hand, the process is still in the stage where molding of the head is possible, the results may be detrimental. The truth of the matter is that many of these patients, although symptom-free, will favor the affected hip and will not allow full weight bearing until the healing process is in effect.

Our present attitude is that recumbency with traction in the early stages, followed by prolonged recumbency until the stage of healing is well under way, when braces which relieve weight bearing on the affected hip may be substituted, will culminate in more perfect clinical and anatomic results. Similar conclusions have previously been presented by Danforth in this country and Eyre-Brook in England.

OPERATIVE MEASURES IN THE ACTIVE STAGE

In considering surgery in coxa plana, the course of the disease should be borne in mind. In all cases a definite series of evolutionary changes takes place, namely, condensation, fragmentation and healing. Until the stage of permanent healing, any attempt to perform reconstruction of the femoral head or arthroplasty would materially lessen chances of success since the femoral head is still in a period of molding. If, on the other hand, the femoral head were sacrificed, it would involve sacrifice of the epiphyseal cartilage as well. Although growth from this center is only 10 per cent of the growth of the leg, continued growth from the trochanteric epiphysis and shaft would cause a marked shortening of the neck. These measures should, therefore, be reserved for late cases, preferably following closure of the epiphysis.

Gentle manipulation may occasionally be of value in correcting limitation of abduction. Manipulation as for congenital dislocation of the hip is not justified in my opinion, since it is based on the assumption that the disease is caused by a mild luxation of the hip. Biopsy may rarely be indicated in selected cases. Conservative therapy will usually clarify the differential from tuberculosis, if continued sufficiently long.

More recently, drilling of the femoral head through the neck has been carried out on the basis that it will hasten the reorganizing process. The number of cases in which this procedure has been done is insufficient to evaluate it, or to determine whether the time saved will be sufficient to justify a surgical procedure. As yet there is apparently no surgical shortcut to healing.

END-RESULTS

In twenty patients, the course of coxa plana had been followed sufficiently long to be classed as end-results. The average period of observation was eight and one-half years, the shortest being three and the longest twenty-eight years. The latter was the longest known follow-up. Study of these cases, although too small for detailed statistical analysis, provided definite impressions regarding the nature and course of the disease.

Upon analyzing these cases, it becomes apparent that age does play a definite role, younger patients offering a better prognosis. The longer the duration of symptoms prior to admission, and the further the evolutionary changes in the roentgenogram are advanced, the less favorable is the outlook. More prominent as a prognostic sign is the degree of cavitation in the metaphysis. In those cases having a more advanced degree of cavitation, with the undermining of the head and neck, the clinical and roentgenographic results were poorer. Treatment, in general, produced anatomically better heads and less clinical residuum.

The type of the epiphysis in the early stages was stated by Legg to be a valuable sign. To me these types, the cap and mushroom, were, as with many other writers, both difficult to determine and of little significance upon analysis.

Position of the femoral head upward and laterally in the acetabulum in one case gave the poorest result in the series. Although marked cavitation occurred in this instance, the mechanical situation is felt to be significant also.

In the end-results, the majority of cases showed more shortening of the neck than had been noted in the earlier end-results of the healed stage. This was accompanied by a broadening of the neck which was proportionately less than in the early healed stage. Also, the head in the oval form appeared to be overflowing the borders of the neck, and in the lateral view appeared much larger than normal, being hemispherical or conical in form. Epiphyseal closure occurred at an earlier age than is normally seen. The assumption is, therefore, made that broadening of the epiphyseal plate with overflow over the edges of the neck is responsible for the changes. Since growth stops early, the neck remains immature in length, while the trochanteric epiphysis continues to grow in length and breadth of the base of the neck, thus adding to the deformity and causing the apparent coxa vara. The acetabulum, in all but the very destructive types, is molded to accommodate the shape of the head.

Arthritic changes were remarkably few, a fact which probably accounts for the flattering clinical results. When present, two forms could be determined, a mild and a marked form. The mild type was represented by moderate narrowing of the joint space and subchondral cysts. This appeared to be on the basis of alteration of form of the head and acetabulum. The marked form was found in cases in which the head was incompletely reorganized, with subsequent pits and depressions in the epiphysis. Conditions described are illustrated in figures 1, 2, 3, 4.

DISCUSSION

Etiology of coxa plana remains obscure. Trau-

ROENTGENOGRAMS OF CASES ILLUSTRATING COXA PLANA

1. a. W.O.R., father, first seen in 1911, treated three months in body cast with hip in moderate abduction.

1. b. Twenty-eight years later.

1. c. W.O.R., Jr., son, seen first in 1939. These two cases occurring in the same family suggest a possible hereditary relationhip.

2. a. Coxa plana occurring in a child with a definite Frölich's syndrome, suggesting an endocrine relationship. Note stage of fragmentation, sloping acetabular roof, lateral displacement of the femoral head, ischium varum, and marked metaphyseal cavitation.

2. b. Ten years later.

3. a. Patient aged two and one-half years, with severe hip injury and negative x-ray.

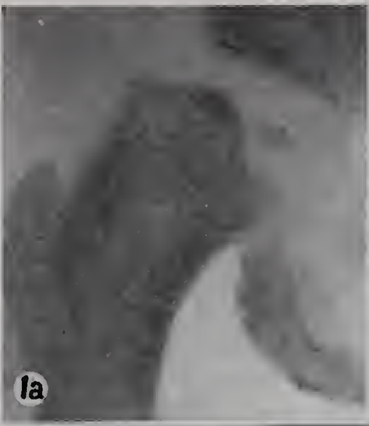
3. b. Coxa plana in condensation stage developing one year later and suggesting traumatic etiology.

3. c. Four years later showing excellent result. The younger the age of onset, the more favorable the prognosis. Note shortening of the femoral neck due to the decreased activity of the growth plate.

4. a. Coxa plana with extreme fragmentation.

4. b. Twelve years later. Abnormality in contour in the anteriorposterior view accounts for the limitation of abduction and internal rotation.

4. c. The hemispherical contour in the lateral view permits the normal range of flexion and extension.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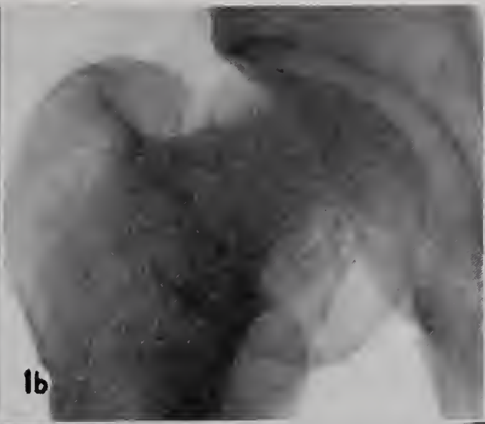
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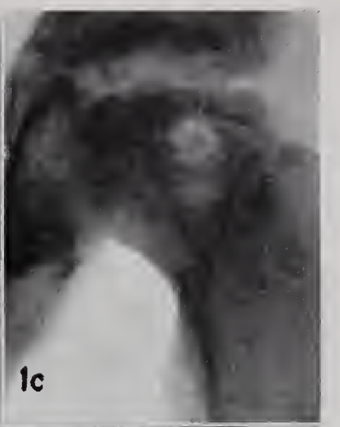
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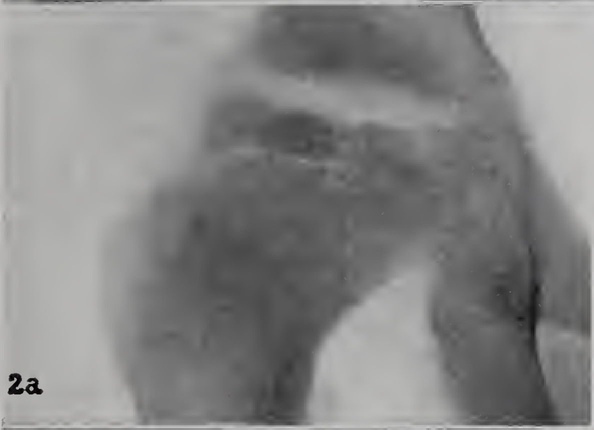
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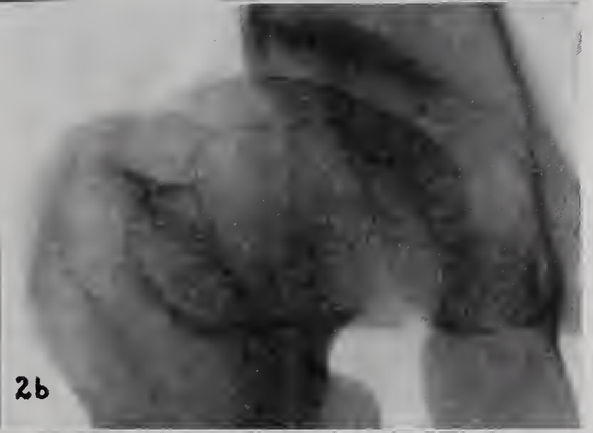
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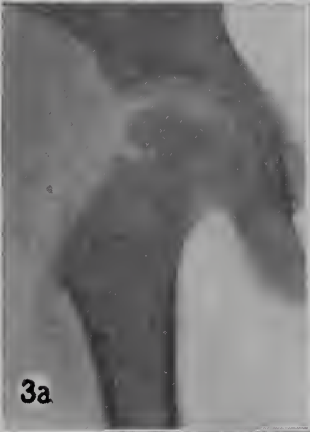
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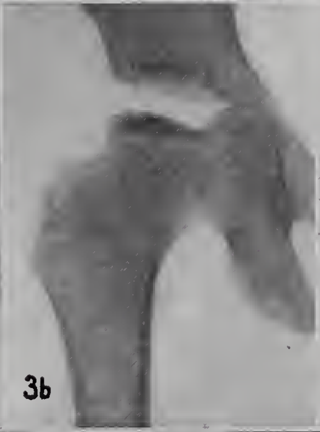
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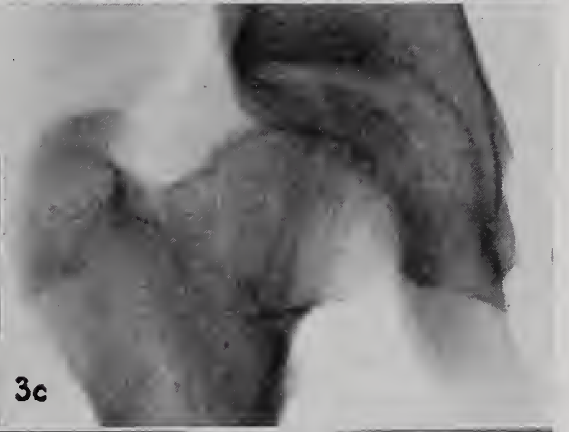
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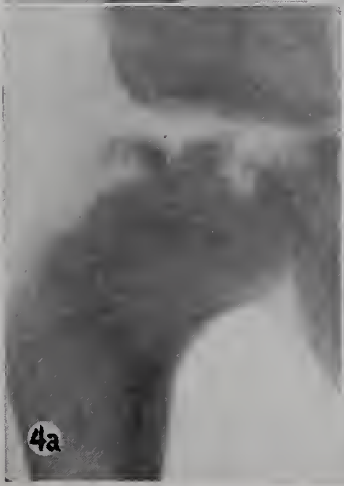
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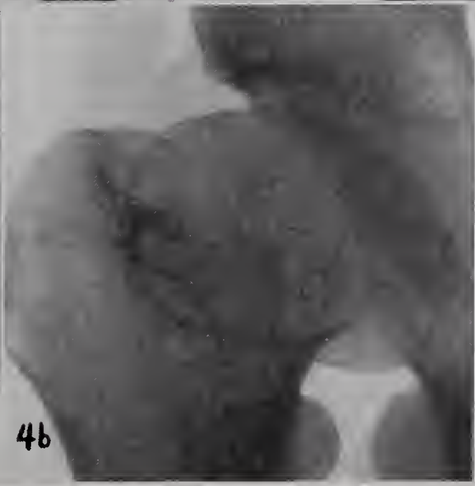
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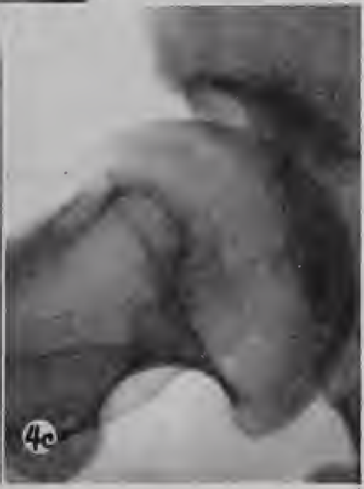
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matic theory dominates the list of causative factors. Definite severe trauma seldom is present, but in one case in this series and occasionally in other reports, trauma has been the exciting factor. Whether the repeated minor traumata of weight bearing, muscle pull and slight injury are sufficient to initiate pathologic changes is conjectural.

The developmental hypothesis of Jansen is based on the conception of the "wide hip socket" or ischium varum, which the later work of Waldenström has shown to be a secondary phenomenon. That an hereditary factor exists is suggested by observations of a case in which both father and son developed the disease. Presence of altered general physiology, especially of endocrine origin, must be seriously considered.

Hypothyroidism has been discussed in recent convincing reports. I have not as yet seen this type, but have seen cases with typical Frölich's syndrome. Infection, too, is a definite possibility. An occasional biopsied case has revealed positive culture findings and inflammatory tissue. Rickets, syphilis and tuberculosis have been repeatedly shown not to be etiologic factors, although they frequently play a part in the differential diagnosis of early cases.

The disease process is believed to be an aseptic necrosis of the femoral head. It is apparent that an aseptic necrosis may be caused by any number of factors which may interfere with the blood supply of the epiphysis; the source of this blood supply includes the artery of the ligamentum teres and its more proximal obturator artery origin, the capsular vessels and vessels of the medullary canal of the diaphysis. In the roentgenogram presence of haziness and irregularity of the acetabulum suggest feasibility of the origin of aseptic necrosis in the pelvic blood supply, while absorption in the femoral neck indicates this region as a possible primary focus. I feel that coxa plana is not a disease entity, but a *coxa plana syndrome.*

Coxa plana is a self-limited disease which passes through a definite cycle of evolutionary changes with a tendency toward spontaneous recovery. Before the onset, the hip is normal in appearance. Earliest changes are usually found in the form of decreased density in the anterior and lateral portion of the head, and are best demonstrated in the lateral roentgenogram. Simultaneously with appearance of condensation, widening of the hip socket appears. This space between the femoral neck and acetabulum, as demonstrated by roentgenogram in hips injected with opaque media, is due to synovia and not cartilage, and may be accounted for by delay in growth of the epiphysis, resulting in a head which is smaller than normal, and which tends to seek an upward and outward position. A little later an increased sloping of the acetabulum may occur. The joint space frequently appears wider than normal because of the delayed substitution of cartilage by bone.

With advent of the fragmentation stage and its process of reorganization, the period of formative bone changes begins. Broadening and flattening of the head become most marked, cavitation of the metaphysis is maximal, and adaptive molding of the acetabulum takes place. At this stage and on into the stage of healing, the hip needs protection. Unfortunately, patients frequently secure clinical relief in the earlier stages, and discontinue treatment when most needed.

With the healing phase comes permanent deformity. No cases, except the subclinical group with only slight transient changes, are without some structural alteration. Better results will have only a slightly enlarged femoral head. Others will have an oval shaped head with little or no arthritic changes, while poorer cases are accompanied by degenerative arthritic changes.

The excellent clinical results so frequently found in the type with oval heads demand some explanation. Abduction and rotation usually are somewhat limited, while adduction is free. On examination of the anterioposterior roentgenogram, it is found that the head is similar to the condyle of the knee if inverted, so that by a combination of rotary and gliding motion, movement in adduction is free and abduction blocked somewhat by the flat head impinging on the acetabulum. The broad diameter in the frontal plane can be seen as a barrier to rotation. On lateral view, the head is conical or hemispherical which allows free flexion movements.

Cavitation of the neck, when advanced, bears a poor prognosis. Structural undermining of the epiphysis with its effect on disorganizing the growth plate, greater destruction of the epiphyseal line by reorganizing granulations and collapse of the metaphysis must be taken into consideration as a reason for this outlook.

The stage of destruction present when the patient is first seen is of importance because alterations in form which have occurred are not reversible; the object of treatment at this time is to prevent further deformity. That treatment is of value is shown by end-results, no patient who was treated having returned for treatment in the healed stage.

PRIMARY SUTURE OF LARGE BOWEL*

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During the past few years articles have been appearing in the literature advocating primary suture and one stage operations in surgery of the large bowel. While this may be a revival of methods that were discarded as being too dangerous twenty years ago it is evident proof that surgery of the colon is in a state of flux. Exactly the best method in any given case is often open to argument.

Arguments that seem unanswerable today may not seem so sound fifty years from now. Forty-nine years ago Connell[1] first gave his paper on intestinal suture. Murphy[2] was the first discusser of the paper and dismissed Connell's contribution with one sentence: "Suture methods have a mortality of forty-seven per cent while anastomosis with a foreign body has a mortality of twenty-seven per cent." Forty years ago in the *Medical Sentinel* the late R. J. Coffey[3] of Portland and L. J. Johnson[4] of Lexington, Kentucky, indulged in an acrimonious and invective argument about the use of raw potato as an aid to intestinal suture. The argument was about a groove that should or should not be in the raw potato spool over which the intestines were sutured.

In advocating occasional primary suture of the colon I may raise a question of doubt as to its advisability. But whatever your final judgment may be as to the merits of the one stage, two or more stage controversy, I wish to present a technic for surgery of the large bowel which I consider not only the best for two stage operations but also believe makes the one stage operation feasible.

The hazard of peritonitis following colon surgery is due to two causes. First and foremost in the minds of the majority of surgeons is septic contents of the bowel. To overcome this internal sepsis many procedures are used; for example, ileostomy, appendectomy, cecostomy and colostomy which are procedures that not only permit cleansing of the colon but also decompress the bowel at the same time. Proper preoperative diet with laxatives and enemas will sometimes do the same thing. Pre- and postoperative use of sulfanilamide is a most valuable adjunct. Use of closed technic as advocated by Kerr[5] is still another way of combatting septic intestinal contents. No method that fails to take this factor into consideration can have much success. But modern methods of primary suture of the colon do take into consideration the septic content of the colon.

I believe that a second and equally important factor is failure of the suture lines to heal. Such cases do well for four or five days. Success seems assured. Then the patient suddenly has a severe pain in the abdomen, goes into shock and dies in a few hours. Postmortem examination often shows a small area of gangrene in the suture line with leakage and generalized peritonitis. Again, many factors enter into this problem: Failure of tissues to heal as seen in postoperative wound disruption; failure to use nonabsorbable sutures for the serosal and subserosal suture; postoperative distention. I believe that the principal cause of failure of anastomosis is gangrene caused by impaired circulation at the suture line. In 1931 Steward and Rankin,[6] after an exhaustive study of blood supply of the colon, found that the bowel wall is supplied by two sets of intramural blood vessels (fig. 1). Short arteries enter the bowel wall near the tenia mesentericus and supply the bowel on each side up to

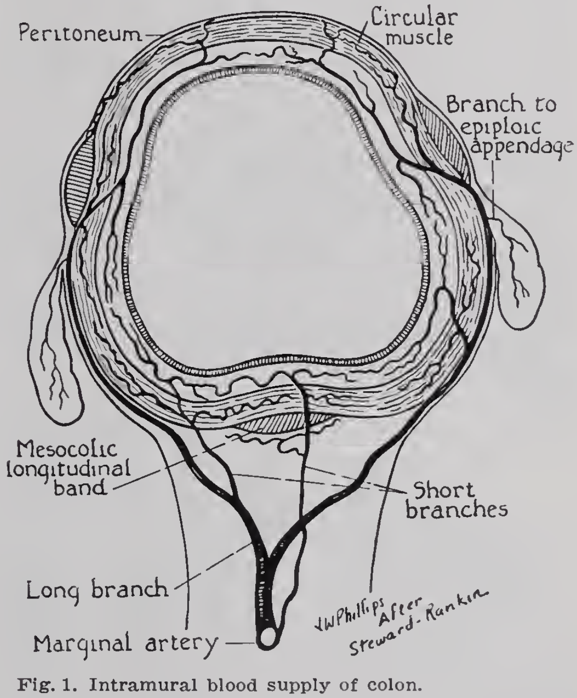
Peritoneum
Circular muscle
Branch to epiploic appendage
Mesocolic longitudinal band
Short branches
Long branch
Marginal artery
JWPhillips After Steward-Rankin

Fig. 1. Intramural blood supply of colon.

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*Read before meeting of North Pacific Surgical Society, Seattle, Wash., Nov. 30, 1940.

[1] Connell, M. E.: Intestinal anastomosis—by a new method, without plates and with but two knots—either silk or catgut sutures may be used. J.A.M.A. 21:150-154, July 29, 1893.

[2] Murphy, J. B.: Discussion of Dr. M. E. Connell's paper. J.A.M.A. 21:154, July 29, 1893.

[3] Coffey, R. C.: Reply to Dr. J. L. Johnson's paper. Medical Sentinel, 8:367-370, November, 1900.

[4] Johnson, J. L.: End to end anastomosis of the Intestine, Medical Sentinel, 8:363-367, November, 1900.

[5] Kerr, H. H.: The story of intestinal anastomosis, Birthday Volume, pp. 295-306, 1940.

[6] Steward, J. A. and Rankin, Fred W.: Blood supply of the large intestine; its surgical considerations. Arch. Surg. 24:843-891, May, 1933.

the next tenia. Long arteries run just under the serosa where they are easily seen. After giving a twig off to a tab of epiploic fat they enter the bowel wall at the tenia medialis and lateralis. All these vessels, from a practical standpoint, are end vessels.

It is apparent that careless ligation of these fat tabs may interfere with circulation of the long arteries and thus fatal gangrene may follow a simple loop colostomy. Incisions of the large bowel must be made at an angle in order to preserve the blood supply. In 1917 Lockhart-Mummery[7] stated, "The real reason why axial union of the large intestines fails has nothing to do with the nature of its contents but is entirely due to the blood supply of its walls." In 1938, twenty-one years later, he again said, "If the colon is divided at an angle of forty-five degrees to its long axis, and joined end to end with ordinary stitches, the blood supply of the edges can be preserved and no sloughing need be feared." Incisions may also be made longitudinally at the antimesenteric border which is midway between the lateral and medial tenia.

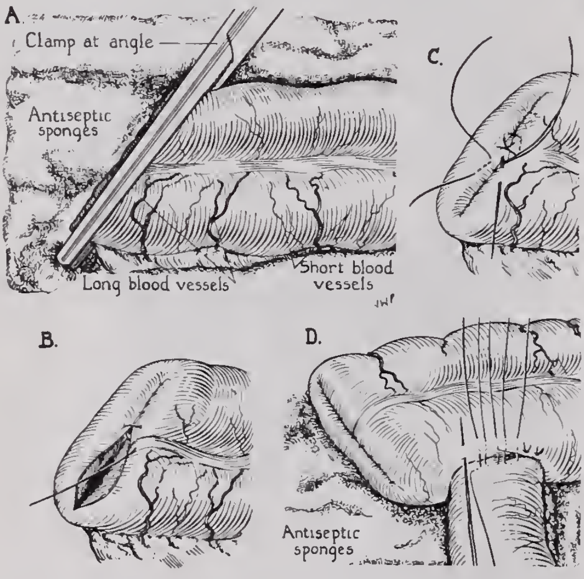

Fig. 2. Technic. A. Clamp at angle to preserve blood supply. B. Inner layer of 5-0 chromic catgut, continuous through and through brought very close to serosal edge. C. Interrupted silk with needle parallel to blood vessel to preserve blood supply to anastamosis. D. Again showing insertion of needle parallel to blood vessels.

But this principle of preserving blood supply of walls of the colon must be carried further. Stitches and suturing must not interfere with the blood supply any more than incisions. I personally use a continuous five zero chromic catgut through and through suture for my inner layer. This is placed very close to the edge of both serosa and mucous membrane. It is hemostatic and also tends to turn in the mucous membrane. A second layer of interrupted silk is used. This is the important stitch. The needle is inserted very carefully, always parallel to blood vessels (fig. 2). A little bit of submucosa is picked up with this stitch and a special effort is made to avoid entering the lumen of the bowel. I do not use a third layer, as this would only increase the hazard of injuring the blood supply. Should this occur the surgeon would be in the position of the pruner who saws off the branch he is sitting on. If conditions are such that healing will not take

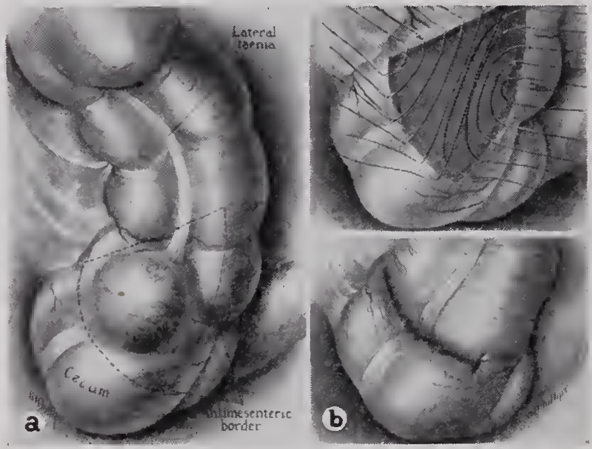

Fig. 3. Leiomyoma of cecum. A. Dotted lines show area resected to remove tumor. B. Semi-schematic. Shows manner in which outer layer of silk sutures was inserted in order to preserve blood supply in plastic reconstruction of cecum.

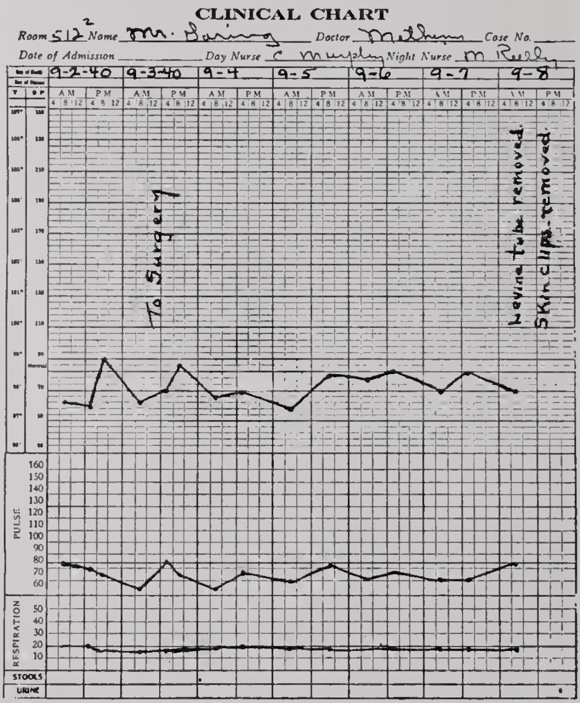

Fig. 4. Clinical chart indicating absence of postoperative infection.

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[7] Lockhart-Mummery, S. P.: End to end anastomosis of the colon, Surg. Gyn. Obst. 24:247-250, Feb., 1917; Operative surgery of colon, (Mayo Foundation Lecture), Proc. Staff Meet., Mayo Clin., 13:485-493, Aug. 3, 1938.

place after the placing of two rows of suture as mentioned, I do not believe three rows or even more rows of sutures will add any safety to the procedure.

I believe that the principles elicited are sound and should be followed in all operations on the colon whether primary or secondary. If not followed, a successful outcome is dependent on luck and not on the skill of the operator.

Using this technic I have performed six one stage operations on the colon. They were end-to-end of the sigmoid, end-to-end, side-to-side and two end-to-side of small to large bowel and one excision of leiomyoma of the cecum (fig. 3). Versatility of this method is demonstrated by the fact that all of these patients recovered and none of them had any postoperative complications of the suture lines. I have attempted to avoid contamination with septic bowel content by preoperative preparation of the gastrointestinal tract. Recently I have used sulfanilamide preoperatively and think it of value.

Healing of tissues has been safeguarded by getting the patient on a positive nutritional balance and avoiding this type of surgery in any case that shows any obstruction, edema or dilatation of the large bowel at the time of surgery. Postoperative distention has been avoided by giving nothing by mouth, by continuous gastric suction for four days and frequent and regular use of the rectal tube during this time. Should a surgeon prefer a cecostomy or ileostomy to prevent distention he will undoubtedly feel safer with a vent proximal to his suture line. However, I have been able to prevent distention by means stated.

As I said in the beginning, surgery of the colon is in a state of flux and judgment is difficult. Six cases are not enough to make permanent conclusions about any technic but I will introduce the chart of my last case, a resection of the right colon for cancer (fig. 4). Postoperative temperature did not reach 99° nor did the pulse go above 80. At least in one case the operation as judged by its postoperative course was all that could be desired.

I especially recommend care in suturing in all surgery of the colon and if you are again tempted to try primary surgery of the colon, I believe you will discover that failure to follow these principles will invite disaster.

ELECTRIC OPHTHALMIA*

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The condition known as electric ophthalmia or, as laymen call it, "electric flash" has been recognized for a number of years but there has never been any very satisfactory form of therapy reported. The pathology produced is similar to that of snow blindness and Klieg eye. Snow blindness is a dimness of vision, usually temporary, due to glare of the sun upon snow, called niphablepsia. Klieg eye is a condition due to exposure to Klieg lights.

Electric ophthalmia may be defined as a condition marked by conjunctivitis, edema of the lids, lacrimation and photophobia due to exposure of the eyes to intense light. The cases that we usually see are caused by an electric flash produced by a short circuit, that is, some conductor of electricity coming in contact with an exposed high voltage electric wire. All of our cases have been employees of a mining company where much electricity is used.

Some report the pathology as exposure of superficial nerve terminals of the cornea by death and desiccation of superficial epithelium and claim that pain will persist until the eipthelium has regenerated. It is our belief that pain is produced by pressure on superficial nerve terminals of the cornea from edema, as the recovery is so rapid from our type of treatment.

TREATMENT

As soon as patients report to the clinic or hospital complaining of photophobia, etc., stating that they have been exposed to an electric flash, they are placed in a reclining position and butyn, pontocaine or metycaine is instilled in the eyes. While this is taking effect we warm up the infrared lamp, place it thirty inches above the patient's eyes and have the patient look at this light steadily with eyes open for twenty minutes. Distance from the eyes depends upon the amount of heat generated and this may be adjusted accordingly. We find thirty inches about an average and start all cases at that distance. After twenty minute exposure to the heat the patient is greatly relieved of his symptoms and we have never had one complain after treatment. All have returned to work on their next shift, some have not missed any time from work. We feel that edema has been relieved by the heat, otherwise recovery could not have been so rapid.

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*Read before meeting of the Juneau Medical Society, Juneau, Alaska, March 11, 1941.

We have seen several dozen cases and will report briefly on a few of them:

CASE REPORTS

Case. 1. L. L. R., age 35 years. Seen February 5, 1941, with the following history: Yesterday a mucking car shorted the trolley line producing an electric flash. He was able to finish the day's work but could not open his eyes the next morning due to a feeling of sand in the eyes; his forehead felt sunburned. There was a marked conjunctivitis, edema of the lids, lacrimation and photophobia. Pontocaine was instilled in the eyes and the patient was placed under an infrared lamp for twenty minutes at a distance of thirty inches. The patient left the clinic feeling fine and returned to work the next day.

Case 2. P. R., age 23 years. Seen February 10, 1941, with following history: Yesterday an extension line under a chute fell against a steel car and produced an electric flash. The patient finished the day's work but could not open his eyes the next morning. He had the usual symptoms. Butyn was instilled in the eyes and the patient was placed under an infrared lamp for twenty minutes at a distance of thirty inches. The patient left the clinic feeling fine and returned to work the next day.

Case 3. Y. S., age 51 years. Seen February 22, 1941, with the following history: Yesterday a steel bar struck the trolley wire producing an electric flash. He finished the day's work and slept well but could not open his eyes on awakening. He had the usual symptoms. Butyn was instilled in the eyes and the patient was placed under an infrared lamp for twenty minutes at a distance of thirty inches. There was complete relief and the patient returned to work the next day.

SUMMARY AND CONCLUSIONS

Electric ophthalmia is a conjunctivitis due to sudden exposure to an electric flash and can be readily cured by direct exposure of the eyes to infrared rays for a duration of twenty minutes at a distance of thirty inches. We would like to emphasize that these are infrared rays and not ultraviolet rays.

It might be interesting to note that no pathologic process was found under slitlamp examination.

Symptoms of electric ophthalmia usually develop six to twelve hours after exposure.

Electric ophthalmia may occur in any exposed eye although the flash may not be in the field of direct vision.

Most of the patients can return to work a few hours after treatment.

We believe this simple procedure will be of great benefit to a number of physicians, particularly those practicing industrial medicine.

TROCHANTERIC FRACTURES OF THE FEMUR

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For many years fixation of a fracture of the upper end of the femur was obtained chiefly through application of a body cast or some form of traction. More recently the use of numerous types of nails, screws, pins or other methods of mechanical fixation has become common and is apparently being recognized as superior to the older methods.

There have remained, however, various types of trochanteric fractures in which few of these later methods can be used. Often because of extensive fragmentation of the trochanteric area, little or no support is given for any of the more common mechanical devices. Treatment of this type of fracture has continued to be by body cast or some form of traction. These patients are then subject to extended hospitalization, nursing care, etc. When healing has occurred there remains a long period of disability due to stiff knees and hips with attendant physical and mental depression as a result of prolonged immobilization.

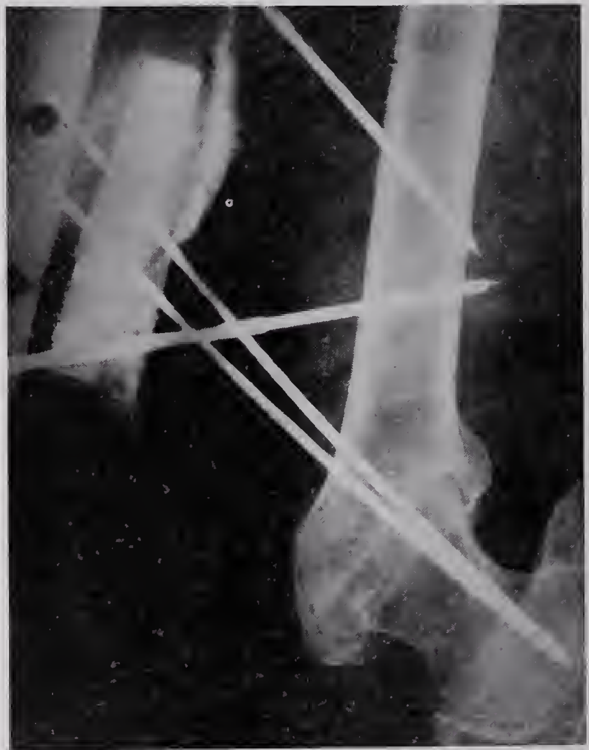

Fig. 1. Anterior posterior view showing pins and bars in position.

I have been using, at King County Hospital, a method of fixation which, so far as I know, has not been used before in the treatment of these fractures. It can be used wherever a simple fracture table is available, requires no incision and only the simplest of instruments. Patients may move the affected hip and extremity, move freely about in bed and be up in a chair and on crutches in a few days.

Essentially the method consists of reduction and immobilization of the break on some form of fracture table. The hip and upper thigh are surgically prepared and two pins passed through the skin and soft structures, through the neck and into the head of the femur. The outer ends of these pins are rigidly clamped with a bar. Then into the upper end of the distal fragment of the shaft a Roger Anderson upper femur half pin unit is inserted. The two bars are firmly bound with plaster and incorporated into a short cast from just above the knee to just below the iliac crest.

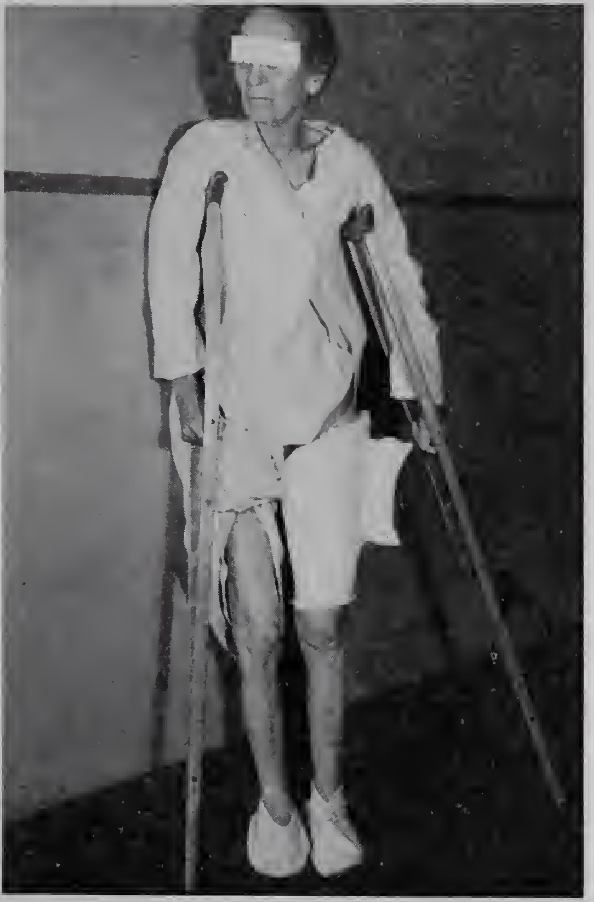

Fig. 2. Shows cast in position. The pins used in this case were longer than necessary.

The day following the operative procedure the patient is permitted to sit up in bed and encouraged to move about. As his confidence in the limb returns and his general condition permits, he is placed on crutches.

So far, in the cases used, fixation has been complete, the patients more comfortable and nursing care much facilitated as compared with the method of treatment with body cast or traction.

Photograph of cast in place and roentgenogram of pin arrangement show the technic clearly (figs. 1, 2).

HYPERVENTILATION SYNDROME*

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In the practice of medicine one is daily impressed with the number of patients who present themselves with symptoms which have resulted from their effort at adjustment to life and their search for contentment and security.

Although this struggle is not new, it seems that the complexity of living in the last few years has increased the difficulties and with this increase the number of individuals who are unable to "take it." As a result, various nervous manifestations have resulted from mild behavior problems to true psychosis. In recent years, many of these have been put in a group which has been classified as anxiety tension state[1,2].

During the first world war, many individuals reasonably well adjusted in civilian life, found difficulty adapting themselves to military life. With anxiety or effort, palpitation, dizziness, weakness and fainting spells occurred. To this disorder, various names were given such as effort syndrome, neurocirculatory asthenia, functional cardiovascular disorder, disordered heart action. Obviously these terms did not fit, since the name reflected only one aspect of the condition. It is apparent that all of these should be grouped in the anxiety tension state group, even though autonomic instability predominates more than the psychologic disturbances.

All of us know how the neurotic patient with these symptoms goes from one doctor to another seeking relief from symptoms that are real and distressing to him. Too often he is given little consideration and no attempt is made to understand his problem. It is now realized that emotion can precipitate symptoms of physical disease by provoking hyperventilation with subsequent blood changes. Symptoms vary from palpitation and dizziness to those of mild or extreme tetany. Physicians unaware of this possibility diagnose a variety of conditions, many of them serious, that this condition remotely resembles. The additional emotional upset brought on by a grave diagnosis often increases frequency and severity of symptoms. It is this group of patients showing symptoms of tetany that I particularly wish to discuss.

Although this condition usually occurs in the anxiety tension group, it must be kept in mind that anything which causes hyperventilation may cause an attack. Instances of tetany being provoked from protracted laughing spells have been reported.

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*Read before meeting of North Pacific Society of Internal Medicine, Seattle, Wash., March 22, 1941.

[1] Kerr, W. J., Dalton, J. W. and Gliebe, P. A.: Some Physical Phenomena Associated with Anxiety States and their Relation to Hyperventilation. Am. Int. Med., 11:961-992, Dec., 1937.

[2] Fraser, R. and Sargant, W.: Hyperventilation Attacks; manifestation in hysteria. Brit. M. J., 1:378-380, Feb. 19, 1938.

It is best to discuss the subject of tetany in general so as to bring out the manner in which emotional upsets can produce symptoms of tetany. Tetany that results from removal of parathyroids is best explained on the basis of calcium deficiency. The low calcium in tetany of rickets, osteomalacia and sprue indicates that this is the cause also[3].

Tetany of alkalosis, whether it results from loss of hydrochloric acid by excessive vomiting, ingestion of sodium bicarbonate, or hyperventilation, cannot be explained by low serum calcium. It has been suggested that a shift of the blood to the alkaline side may cause a reduction of the ionic calcium fraction without reducing the total calcium of the serum. Proof is insufficient to warrant such an explanation, whereas careful studies indicate that tetany in these instances is due to a tissue alkalosis in itself[3].

In a paper on the etiology of effort syndrome, Saley and Schrock[4] found that 80 per cent of one hundred patients suffering from effort syndrome sighed excessively, whereas only 10 per cent of four hundred normal controls exhibited the same phenomenon. They used the hyperventilation test to provoke symptoms of effort syndrome. When they added 2 per cent carbon dioxide to the room air, symptoms of suffocation disappeared and breathing became easier. They studied the blood chemistry with hyperventilation and found a rise in the pH of the blood and increase of the bicarbonate of the blood from the increased loss of carbon dioxide. Patients were then given air with 11 per cent carbon dioxide. Within a very short time specimens of blood showed the blood chemistry had returned to normal.

The train of events leading to production of anxiety state and subsequent hyperventilation syndrome is described by Kerr et al, as follows:

> An individual has a difficulty to meet. The reaction psychologically may be one of two types: the individual may face his problem squarely and find a solution or he may attempt to ignore the difficulty and deny its existence. Regardless of any attempt on the part of the patient to deny the existence of his difficulty, nevertheless it still exists. In our opinion, it is the suppressed emotion associated with the difficulty that directly stimulates the autonomic nervous system. The sympathetic nervous mechanism is aroused, and the most outstanding reaction is stimulation of the secretion by the adrenals. The cerebral cortical centers are stimulated directly and also by oversecretion of adrenalin. Adrenalin irritates also the cardiac and respiratory centers, causing at first slow heart rate with a large stroke volume output, and later a rapid heart rate. There is speeding up of the respiratory rate and increase in ventilation. With the increase in ventilation the carbon dioxide in the alveolar spaces is expelled, and more is shifted from the blood stream and tissues into the alveolar spaces. Chlorides are retained in the blood and phosphates likewise. Urea is not produced by the liver, hence ammonium salts are decreased in the urine. These later manifestations are the result of an attempt on the part of the body to prevent too great a shift to the alkaline side because of the sudden loss of carbon dioxide and as a result the patient suffers from the lack of sufficient acid ions and experiences irritability of muscle tissue because of alkalosis.

Symptoms of hyperventilation, although variable, are readily recognized if one has the condition in mind. This is particularly true when symptoms of tetany occur. When symptoms are less marked the condition may not be recognized as being due to hyperventilation. Most patients complain of dizziness followed by numbness or tingling of the hands and feet. There may be a sense of constriction of the throat or tightness in the chest or discomfort in the epigastrium. Twitching of the facial muscles may occur. In severe cases laryngeal stridor, general convulsions and unconsciousness may take place. As a rule, tetany does not progress beyond the point where spasm of the muscles of hands and feet occurs.

In an extensive study of thirty-five cases, Kerr et al. found a number of patients with precordial pain and palpitation that had been diagnosed coronary occlusion, angina pectoris or aneurysm of the aorta. Others had symptoms suggesting Reynaud's in which spasm of arterioles had been initiated by hyperventilation. Other conditions with which the syndrome was confused were thyrotoxicosis and Meniére's disease. The diagnosis was proved by using hyperventilation test, by obtaining relief with carbon dioxide during attacks or use of acid salts and acid ash diet.

For the study of these cases, the hyperventilation test has been devised. Before using this, however, it is important to obtain a complete history and do a complete physical examination, including a neurologic. This should include an attempt to elicit Chvostek's and Trousseau's sign. The patient lying in a comfortable position is then instructed to breathe at the rate of 18-20 a minute, the hand of the examiner being placed on the epigastrium regulating the rhythm. Time at onset of test and onset of symptoms is noted. An effort is made to produce tetany or the symptoms of the complaint. If unsuccessful in 30 minutes, the procedure is discontinued. The spasms and symptoms are relieved by carbon dioxid, holding breath or rebreathing in a sack.

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[3] Best, C. H. and Taylor, N. B.: The Physiological Basis of Medical Practice. Wm. Wood and Co., Baltimore, Md., 1937. Pp. 1100-1107.

[4] Saley, M. H. and Shock, N. W.: Etiology of Effort Syndrome. Am. J. M. Sc., 196:840-851, Dec., 1938.

Establishment of the diagnosis in this manner is extremely important as well as impressive to the patient. An explanation of the mechanism at the time in simple language shows the part that he plays in initiation of the symptoms. He realizes just how he can help prevent the attacks. The dramatic demonstration makes him feel that his physician thoroughly understands his case. The confidence established in the physician makes psychotherapy, so important in treatment, much more readily carried out.

When attacks continue, even though the mechanism of production has been thoroughly explained to the patient, an acid ash diet, acid salts such as ammonium chloride or sedatives may be of value in treatment.

The following case illustrates most of the features of hyperventilation that have been discussed:

A 17 year old youth was admitted to the hospital on June 25, 1940, having been sent in by his doctor from the country. No definite diagnosis had been made but cardiac condition had been suspected because of two unusual spells, five and three days before entrance. He had never had any illness of importance but had always been a nervous, sensitive type of individual. Although he had been interested in various types of athletics, he had never taken very active part in any excepting basketball. He had attempted to play basketball but because he became very white when playing the coach had seldom permitted him to play. He had attended a few parties and dances but with little interest, being definitely asocial.

The situation at home seemed to have been a factor in his nervousness. He was the oldest of ten children, having three brothers and six sisters. His relationship with his sisters and brothers had always been very pleasant but he had had difficulty getting along with his father. He had never been particularly interested in farm work. It had been his ambition to be a depot station agent. This was due perhaps to the fact that he had been friendly with the local agent and had always been interested in telegraphy. His father felt that he should become a farmer and that hard work would solve the boy's difficulties. For the work that he did do at home, he had been given very little spending money and had had very little opportunity for pleasure. His mother and sisters had been very sympathetic to him; perhaps too much so.

On entrance into the hospital he stated that he was weak and unable to work. His illness had begun a year before when he returned to the ranch and attempted to do heavy work after having spent the winter attending high school and living with his sister in a neighboring town. He was unable to do any work that summer and spent his time lying around home. When school opened in the fall, he returned to high school and, except for mild spells of weakness, had no difficulty through the school year. Upon returning to the ranch after school this spring, and attempting to work, he again became weak. Nervousness increased with his dislike for his work and scolding from his father.

Five days before entrance in the hospital, after a tense situation, he experienced his first spell which he described in the following words: "I couldn't tell when I was getting one of these spells. It seemed to begin with a slight headache—sort of dizziness. My hands begin to tingle, so do my lips and around my eyes and my feet. Both my hands and feet draw back stiff and grow numb at the same time. My stomach starts to draw up in a knot and the muscles get hard. Then my hands let loose all of a sudden and start to tingle again. My stomach then lets loose gradually." Further questioning revealed that the headache was occipital and that he did not lose consciousness, the entire spell lasting but a few minutes.

Examination revealed a slender but well nourished boy of 17 years, with a ruddy complexion. Although he appeared apprehensive and uneasy, he answered questions promptly and intelligently. Physical examination, including a careful neurologic examination, was essentially negative, except for a rapid heart, cold, moist hands and feet, and hyperactive reflexes. Blood pressure was 130/70. Laboratory tests: Urinalysis, negative. Blood count: Hb. 17 grams, rbs 5,150,000, wbc 10,500, differential normal. Blood calcium 10 mgs.

Hyperventilation Test. Patient was instructed to breathe deeply and regularly. The rhythm was initiated by placing the hand of the examiner lightly on the epigastrium so as to make respirations occur at the rate of about 18-20 per minute. Within two minutes he complained of dizziness and a prickly sensation in his lips, hands and feet. This was followed by numbness. Within three minutes a marked carpopedal spasm appeared. The spasm was more severe and remained longer in the right hand. Five minutes after stopping the test and starting the rebreathing in the sack, normal function had returned to the hands. A striking feature was the cold, moist cyanotic hands and feet that occurred during the test.**

Following the test he complained of weakness and epigastric discomfort which had resulted from spasm of the abdominal muscles. The test was repeated several times, always with the same result. Chvostek's and Trousseau's signs were negative before and during the tests.

Although it is recognized that the hyperventilation test might provoke symptoms in a normal individual, the symptoms are not as marked nor can they be provoked so readily.

In an individual who is subject to these attacks, the hyperventilation is not as obvious as it is in a hyperventilation test. Neither the patient nor relatives may be aware of any change in respiration prior to the attack. This type of individual has a tendency to sigh or breathe deeply at irregular intervals. This is often sufficient to keep the alkali reserve higher than average so that when a tense situation arises which causes an increase in respiration, an alkalosis sufficient to produce tetany is easily produced.

In conclusion, I might say that this paper has not been presented primarily to show a rather unusual case but to call attention to the fact that functional nervous disorders, by the provocation of hyperventilation, are capable of bringing about physical changes which cause symptoms that may be confused with those due to organic disease.

**A colored motion picture film of this test was shown with the presentation of the paper.

HEADACHE: MECHANISM AND TREATMENT*

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Headache is such a common complaint in experience of the average doctor that it sometimes receives very little attention. The literature is voluminous with theories as to its etiology and treatment. It is so common and it occurs as a symptom of so many different syndromes that it would be impossible to cover them all in a paper of this type.

In recent years much has been added to our knowledge of the anatomy and physiology of the cranial cavity and its contents. It is my purpose to review this subject in the light of these newer concepts and from it to attempt practical conclusions that are useful in treatment of these intolerable and intractable headaches.

SENSITIVITY OF INTRACRANIAL STRUCTURES

Much of our present information on the mechanism of headache has been given to us by the neurosurgeon. While doing brain operations under local anesthesia they have learned what intracranial structures are sensitive and what structures are insensitive. In reflecting a bone flap to expose the brain, as in an osteoplastic craniotomy, the surgeon needs only to infiltrate the scalp and the periosteum with procaine to make them insensitive. These structures, like skin and periosteum elsewhere in the body, are amply supplied by sensory nerves for the conduction of pain impulses. The bone is insensitive and, as a consequence, a burr opening may be made without the slightest discomfort to the patient. These openings may be connected with a gigli saw without anesthesia. The dura is then exposed, and at this point several structures are encountered which are of interest in the mechanism for the production of intracranial pain.

First, the dura should be considered. That the dura is sensitive in certain regions has long been known from the observation of many neurosurgeons, notably Cushing and Krause. In 1927, Foerester[1] (quoting Penfield) reported that the dura was sensitive especially at the base of the skull and close to the larger branches of the middle meningeal artery. Dura over the convexity of the brain was found to be less sensitive. Penfield also reported his observations on sensitiveness of the tentorium and the choroid plexus but he found the pia arachnoid and the brain substance insensitive.

In 1934, he reported his observations on sensitivity of the dura and intracranial structures. These observations were made during the course of many brain operations done under local anesthesia. He reported that the cerebral arteries and veins are largely insensitive. Exceptions are the middle cerebral artery and the circle of Willis which are sensitive. Upon stimulation with electricity they will produce pain on the same side of the head. This is referred either to the temporal area or else above the eye.

The cerebral veins are insensitive except as they cross the subdural space on their way to the dural sinuses. At this point they obtain nerve fibers from the branches of the meningeal nerves that accompany the arteries. The brain tissue itself is insensitive and it may be incised, pressed upon, coagulated, or electrically stimulated without production of pain.

The dura, however, is extremely sensitive in some locations, especially at the points where branches of the middle meningeal artery are present. The dural sinuses are likewise extremely sensitive, as are the tentorium and falx, and when stimulated, usually produce pain which is referred to a distance.

Fay[2] states that stimulation of the circle of Willis produces pain in the forehead and deep behind the eyes. The middle cerebral artery, when stimulated, produces pain in the temporoparietal area. Stimulation of the cavernous sinus produces pain which is felt behind the eyes and at times is referred toward the jaw. Excitation of the common carotid artery at the bifurcation projects pain into the teeth, gums, lips and, at times, into the temporoparietal area of the head. Pain is produced in the tongue, gums, teeth, face and occipital area when the jugular vein is stimulated.

VASCULAR HEADACHE

He studied the relationship of increased intracranial pressure and headache by attaching a burette to a spinal needle which was inserted into the lumbar sac. The cerebrospinal fluid space was then over filled. This resulted in the distention of the ventricular and subarachnoid spaces. In this manner the arterial vascular tree was placed under what Fay termed a stretch mechanism. An immediate and severe headache was produced which was then quickly relieved by releasing the hydraulic distention.

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*Read before annual meeting of British Columbia Medical Association, Nelson, B. C., Sept. 11, 1940.

[1] Foerster, O. (Quoting Penfield): Encephalographische Erfahrungen. Ztschr. f. d. ges. Neurol. u. Psychiat., 94:515, 1924. Penfield, W.: A contribution to the mechanism of intracranial pain. A. Research Nerv. and Ment. Dis., Proc., 15:399-416, 1935.

[2] Fay, Temple: Mechanism of headache. Tr. Am. Neurol. A., 62:74-77, 1936.

Next he allowed the cerebrospinal fluid to escape, resulting in a hypotension of the spinal fluid. He then compressed the jugular veins and had the patient cough and strain. In this manner he produced a hyperemia of the intracranial cavity which induced severe headache. This headache was then relieved by introduction of normal saline into the subarachnoid space, returning the fluid to normal. In this way, the blood which had temporarily overdistended the cerebral vessels was expressed from them.

It is Fay's opinion that pain fibers are situated upon the large arterial branches leading to the cranial structures. These fibers descend with the vessels leaving the skull and go into the upper portion of the thorax by various routes. They enter the spinal cord by way of the dorsal roots between the seventh cervical and thoracic segments of the spinal cord. Relief of the unilateral headache by severing the spinothalmic tract on the opposite side of the cord is proof of his contention.

Headache is produced in two ways, both on a vascular basis, according to Fay. The first instance is by distention of the cerebrospinal fluid space which produces a stretch of the vascular structures, irritating the pain fibers surrounding the vessels. This type of headache is relieved by withdrawal of spinal fluid. In the second instance the stretch of the vascular structures is produced by an overfilling of the dural sinuses and intracranial vessels. This overfilling is a compensatory mechanism after the withdrawal of spinal fluid.

This type of headache is typified by the postpuncture headache which occurs in about 10 to 25 per cent of spinal punctures performed. This headache is usually relieved by the intraspinal injection of sterile saline solution or by hydrating the patient by forcing fluids by mouth.

MIGRAINE

In recent years the successful and widespread use of ergotamine tartrate to relieve paroxysms of migraine headache has lead to many practical deductions relative to the mechanism of headache. It has been known for a long time that ergot in various preparations had a direct effect on smooth muscle, producing a contraction of smooth muscle fibers throughout the body. It was also known that in very large amounts it produces a paralytic effect which made smooth muscle unresponsive to vasoconstrictor drugs such as epinephrine. It was on the basis of this effect that ergotamine was introduced into the therapy of migraine.

When ergotamine was first advocated, it was assumed that the mechanism of migraine was one of vasoconstriction due to the excessive activity of the autonomic nervous system which supply the cerebral vessels. This deduction was made because the attack is frequently initiated by scintillating scotomata, paresthesias about the face, and sometimes hemianopia. These phenomena are undoubtedly due to vasospasm. Ergotamine was given to relax the vessel spasm. However, these phenomena are always the aura of migraine and the headache never begins until after they have diminshed or passed. Following the phase of spasm comes one of dilatation and it is the stretch of the intracranial vessels that is responsible for the occurrence of pain. This view has been substantiated by excellent experimental work recently published.

Graham and Wolfe[3] have reported an ingenious method of measuring pulsations of the temporal and occipital arteries. This consists of a tambour connected to a Frank capsule, the pulsations being recorded on bromide paper. In the same manner they recorded the pulsations of the intracranial and intervertebral arteries as reflected in changes in spinal fluid pressure. Observations were made during migraine attacks. First, recordings were made of the amplitude of pulsations of the temporal and occipital arteries and intracranial vessels as mentioned above. Then ergotamine tartrate was given intravenously and recordings were made of the pulsations until the headache had subsided. In some instances the reduction of amplitude of pulsation was 80 per cent of the original as found during headache. Decline in amplitude of pulsations was in every case closely related to decline in headache. If amplitude of pulsation declined slowly, headache declined slowly, and vice versa.

In cases in which pulsations of spinal fluid was recorded their findings were inconstant. However, in none of the cases studied did they find any change in the cerebrospinal fluid pressure although the headache was relieved.

It is the opinion of these authors that migraine headache is principally due to a stretch mechanism of the branches of the external carotid artery, especially the middle meningeal and superficial temporal. They admit, however, that the evidence obtained is too meager to draw any conclusions about the effect of ergotamine tartrate on the state of the internal carotid artery and its branches.

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3. Graham, J. R., Wolfe, H. G.: Mechanism of migraine headache and action of ergotamine tartrate. Arch. Neurol. and Psychiat., 39:737-763, April, 1938.

4. Pickering, G. W.: Observations on mechanism of headache produced by histamine. Clin. Sc., 1:77-101, July, 1933.

EFFECT OF HISTAMINE

Another valuable observation and contribution to our knowledge of mechanism of headache was given by Pickering[4] in 1933. While attempting to measure circulation time it was noticed that after each injection of histamine, which was the drug being used to speed up circulation, a severe headache followed. He studied the means by which this drug produced headache. By applying an Esmarch bandage to the head in order to stop circulation to the scalp, he determined that headache did not arise in the scalp. When histamine was given intravenously, headache occured as usual. He surmised that headache was arising from the meninges by the fact that it was intensified by shaking the head from side to side. In this maneuver the brain tends to lag behind the skull and the meninges are placed on stretch. It was also noticed that pain occurred in an area supplied by a branch of the trigeminal nerve. Patients, who had the sensory root of the trigeminal nerve sectioned for relief of trigeminal neuralgia, were found to have headaches occurring only on the opposite or normally innervated side of the head when histamine was given.

Effect of histamine is chiefly on smooth muscle, and in the cranial cavity smooth muscle is found only in the blood vessels. It is a vasodilator and when given intravenously it produces flushing of the face, fall in blood pressure and rise in spinal fluid pressure. All of these are consequent to its vasodilating action.

Headache does not occur immediately while blood pressure is falling but after a few minutes when arterial pressure has recovered from its fall and has returned to its original level. Cerebrospinal fluid pressure first rises and then falls to its original level. As arterial pressure is falling intracranial pressure is rising due to vasodilation. This increase in spinal fluid pressure prevents stretch mechanism of intracranial arteries but when intracranial pressure returns to its original level the toneless arteries are allowed to stretch. Pain results.

Mechanism of this type of headache, according to Pickering, is as follows: In the first phase, dilatation of small vessels predominates. Intracranial arteries are relaxed but are prevented from expanding by fall of arterial pressure. During the second phase arterial and intracranial pressures return to normal and intracranial arteries which are still relaxed begin to expand. This expansion stimulates nerve fibers in the walls of vessels, causing pain. This pain may be quickly relieved by administering a vasoconstrictor drug such as adrenalin or by elevating cerebrospinal fluid pressure by injecting normal saline solution.

From the foregoing evidence I believe that we can safely conclude that mechanism of headaches is due either to traction directly upon nerves in the dura or indirectly by stimulating nerves accompanying intracranial arteries. This may be done by direct traction or by vasodilatation.

INTRACRANIAL PRESSURE

There are a few conditions in which headache is the cardinal and often disabling symptom. First are those conditions which produce increase in intracranial pressure such as brain tumors. This headache is typified by occurring at night or in the very early hours of morning. The patient states that he is awakened at four or five in the morning with his headache, often so severe that he is forced to arise. After being up for a few hours the pain disappears and may come back toward evening or maybe not until the next morning.

The pain is often accentuated by sneezing, coughing, stooping, straining or by shaking the head. Pain may be severe and paroxysmal. This type of headache always suggests intracranial disease and is the type of headache most frequently found with brain tumor. The pain, most probably, has a vascular basis and may be explained as follows:

When the patient lies down at night there is a fall of arterial blood pressure and an increasing of venous pressure in the large cortical veins and dural sinuses. Result of this is a passive hyperemia and distention of the large veins and dural sinuses. These are adequately supplied with nerve fibers for conduction of pain impulses. This pain may be further accentuated by fall in arterial pressure, resulting in a smaller volume of arterial blood entering the brain and consequently producing a stretch mechanism on the veins that anchor brain substance to dural sinuses.

Until recently, headache associated with brain tumor was nearly always attributed to increase in intracranial pressure. With our growing experience, we have encountered brain tumor with headache with low intracranial pressure. This fact we now interpret in terms of intracranial volume relationships.

In one instance spinal puncture may relieve headache associated with increased intracranial pressure and in the next instance headache may be aggravated by spinal fluid drainage, depending upon whether the removal of the cerebrospinal fluid produces or relieves the stretch mechanism upon the intracranial vessels. Surgical treatment of increased intracranial pressure is naturally founded upon an attempt to restore to normal the intracranial volume relationships by removing the cause of increased intracranial pressure. This may also be done by decreasing fluid volume content of the intracranial cavity by active dehydration.

Spinal puncture is a dangerous procedure on a patient who has increased intracranial pressure because of possibility of cerebral herniation into the incisura of the tentorium or into the foramen magnum. It is not necessary to do a spinal puncture to make a diagnosis of increased intracranial pressure, as this diagnosis can be made more quickly and safely by examining the retinal vessels and the degree of swelling of the optic nerve head with an opthalmoscope.

POSTTRAUMATIC HEADACHE

Posttraumatic headache is another complaint which we have thought due to increased intracranial pressure. However, Penfield and Norcross[5] have recently explained it more satisfactorily in another way. They emphasize the fact that headache and dizziness usually begin several days or weeks after head injury. This pain may be aggravated by stooping, coughing or straining and is frequently confined to a definite area of the head. The pain is, in many instances, relieved by spinal drainage, replacing the fluid with air. The patient is placed in a position so that air does not enter the ventricles of the brain but rather diffuses into subdural and subarachnoid spaces. Air in the subdural space will break down very light adhesions which occur between the dura and the arachnoid and which exert traction on surface vessels of the brain, producing pain by a stretch mechanism on these vessels.

The adhesions, Penfield and Norcross explain in this manner: When the brain is injured, it swells and therefore moves a little in relation to the skull. In this position adhesions form. After a few days or weeks swelling disappears and the brain returns to its normal position, causing tension to be placed on these adhesions which, in turn, place a stretch on cerebral vessels. This, I believe, is the most logical theory of the cause of posttraumatic headache and dizziness that has yet been advanced.

Migraine headache has recently received considerable attention. This is especially so since advent of ergotamine tartrate. The important fact that this drug, given intravenously or intramuscularly, relieves headache in nearly 90 per cent of cases has stimulated renewed interest in solution of this age old problem.

Branches of the external carotid artery going to the intracranial cavity are accompanied by nerves. In some instances, migraine confined to the area supplied by these arteries has been cured by severing the artery and its periarterial nerves. This procedure, however, is not recommended unless, after careful study, it can be safely concluded that the mechanism of pain is definitely associated with a stretch mechanism of the artery concerned, such as the temporal, the occipital or the middle meningeal. Penfield and McNaughton[6] are of the opinion that most headaches are dural in origin but under dural must be included dural sinuses and large veins entering the sinuses. They further state that sensitivity of arteries of the circle of Willis may be due to their attachment to the leptomeninges. They recite several case histories in which intractable headache was cured by surgical procedures based upon this conception.

A NEW SYNDROME

There has recently been added to our increasing knowledge of this subject, a new syndrome of vascular headache, which Horton, MacLean and Craig[7] have called erythromelalgia of the head. This is a severe paroxysmal headache which is confined to one side of the head and face and is accompanied by flushing of the face on the affected side, by increased lacrimation and plugging of the nose. At the same time the temporal vessels stand out. The headache may last a few minutes to one half an hour or more. These recur several times a day or night.

This syndrome is characterized by being worse at night. These patients often are able to remain in a horizontal position only for a short time without occurrence of a headache. They often notice striking exactness about the time at which headaches recur. One patient stated that at five o'clock each morning he was awakened as if by an alarm clock and from then until his usual rising time he would be forced out of bed to walk the floor at intervals of twenty or thirty minutes.

This headache is made worse by taking of alcohol even in small quantities and recurs so frequently that often patients are unable to proceed with their usual occupations. Headache can be initiated by giving histamine intravenously and is relieved by compressing the carotid artery and sometimes the temporal artery. Often the subcutaneous injection of epinephrine will give relief from the headache produced by histamine injection.

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[5] Penfield, W., Norcross, N. C.: Subdural traction and posttraumatic headache; study of pathology and therapeusis. Arch. Neurol. and Psychiat., 36:75-95, July, 1936.

[6] Penfield, W., McNaughton, F.: Dural headache and innervation of the dura mater. Arch. Neural. and Psychiat., 44:43-75, July, 1940.

[7] Horton, B. T., MacLean, A. R., Craig, W. McK.: A new syndrome of vascular headache: results of treatment with histamine: preliminary report. Proc. Staff Meet., Mayo Clinic, 14:257-260, April 26, 1939.

It is the opinion of the authors that these patients develop within themselves a histaminelike substance which periodically produces dilatation of cranial arteries which is responsible for the pain. On this assumption, they advocate administering histamine subcutaneously in increasing doses, thereby desensitizing the patient to histamine and the histaminelike substance. After several injections, the patients are able to tolerate rather large doses of the drug without pain, although they may experience a sensation of warmth and flushing about the head and neck.

SUMMARY AND CONCLUSIONS

From information gained at the operating table, neurosurgeons have contributed valuable knowledge concerning the mechanism of headache. They have determined with accuracy which portions of the dura and intracranial vessels are sensitive. This information has stimulated clinical and laboratory research. As a result our primary concepts regarding intracranial pain have changed.

It has been demonstrated that certain areas of the dura are rich in nerve supply, especially those areas about the dural sinuses and branches of the middle meningeal artery. When stimulated, pain is produced which is referred to either the front or back of the head.

Intracranial veins are accompanied by nerves as they cross the subdural space and enter the dural sinuses but in other locations on the surface of the brain these same structures are insensitive and are thereby incapable of producing pain. Penfield is of the opinion that most headache is dural in origin, either by direct traction on the sensitive portion of the dura or indirectly by traction on arteries which are attached to the leptomeninges. He feels, however, that headache may also be produced by distention of the walls of vessels.

Fay is of the opinion that most headaches are on a vascular basis and are due to stretch mechanism on intracranial vessels in one of two ways: first, by distention of the ventricular subarachnoid space producing a stretch of sensitive vascular structures and second, by overfilling of sensitive vascular structures themselves.

Advent of ergotamine tartrate into therapy of migraine has likewise stimulated new interest in this field. Its vasoconstrictor action in relieving this particular type of headache has added weight to arguments of proponents of the vascular theory of headache.

Production of headache with histamine and immediate relief by compression of the common carotid artery or administration of vasoconstrictor drugs has led to discovery of a new headache syndrome which is cured by administering histamine in increasing doses. This desensitizes the individual to his own histaminelike substance.

Postpuncture headache is often relieved by intracranial injection of sterile normal saline solution or by active hydration with large quantities of fluid by mouth.

Intractable headache has been cured by surgical removal of scars on sensitive portions of dura and surgical interruption of afferent pain pathways in the sensory root of the trigeminal nerve as well as the nerves accompanying the meningeal arteries. These surgical procedures are recommended, however, only in thoroughly studied cases.

RUPTURE OF SPLEEN

Russel L. Baker, M.D.
WHITE SALMON, WASH.

REPORT OF TWO CASES FOLLOWING SLIGHT INJURY

The normal spleen is frequently injured by blows on the left side of the abdomen and chest. The amount of injuring force necessary to cause serious damage in reported cases varies markedly. Diseases of the spleen producing splenomegaly predispose the organ to rupture. Location of the spleen in the upper left side of the abdomen, protected by the lower ribs, is one of great safety from an anatomic viewpoint. Mobility of the spleen should favorably affect its safety. This rigid wall, however, may be the very factor in causing rupture of the spleen when subjected to properly directed force. The cellular and fluid nature of this organ with its delicate supporting stroma is, no doubt, the greatest factor in its inability to withstand injury. That this accident may occur in individuals carrying out normal activities of life or commonplace athletic games is of interest. That serious and potentially fatal injury may occur when there is little or no external evidence and where the injury was of mild nature is worth considering. The recent report by Frank[1] describes traumatic rupture of the spleen occurring in a football game. The two cases described below are of children who were severely injured while at normal play. I believe they are sufficiently interesting to report here.

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[1] Frank, L. W.: Traumatic Rupture of the Spleen: an Unusual Football Injury. J. A. M. A., 116: 1053, Mar. 15, 1941.

CASE REPORTS

Case 1. November 9, 1938, E. W., a white female, age 8, was brought to the office by her mother from a distance of 35 miles. Chief complaint was pain in the abdomen.

She gave the following history: She was coming home from school for lunch, a distance of about one-half mile. While running along the track she stumbled and fell down across a tie, striking herself in the abdomen. She said she had pain at once but got up and went on home. A short distance from home her mother noted that the child staggered and then fell down again. She was carried to the house and put to bed. Pain became worse and the child appeared very ill.

Examination: The child obviously was in serious condition. The pulse was thin and slow at 78. Lips were pale, hands and feet were cold. Temperature 97°, respirations 20, weight 47 pounds. Heart and lungs normal. Abdomen: There was distention and tenseness of the abdominal wall. She complained of pain on pressure which also caused pain in both shoulders but more severe in the left shoulder. Pain was more severe in the left side of the abdomen. Each time she was palpated here she experienced shoulder pain.

Blood: Hemoglobin (Sahli-Haskins) 71, 9.80 gms., Red blood count 3.45 and White blood count 29,800. Urine: Clear. Albumin negative; sugar negative; sediment negative.

Roentgenogram of abdomen revealed elevated diaphragm on left. There was a diffuse radiopaque shadow of entire left side of abdomen, extending into upper abdomen.

Diagnosis of rupture of the spleen was made and operation advised. Before surgery 400 cc 10 per cent dextrose in saline was given and during the operation 300 cc citrated blood was administered.

A left upper incision was made. The abdomen was full of fresh blood. The spleen was located, when several large clots were removed from the upper left quadrant. The lower one third of the spleen had been completely ruptured and was entirely free in the abdomen. The pedicle was clamped and securely tied with catgut. The remainder of the spleen was removed and the wound closed. The spleen appeared to be of normal size. The patient made an uneventful recovery.

Examination of this patient on March 29, 1941, reveals her to be normal, though underweight. Weight 56 pounds, height 53 inches, temperature 98.6°. Blood: Hemoglobin (Sahli-Haskins) 80, 11.04 gms., red blood count 3.76, white blood count 10,200 and sedimentation rate 4/12. Differential count: polymorphonuclear 41, small lymphocytes 41, eosinophils 3, monocytes 13, myelocytes 1, and Turk plasma cell 1.

Case 2. R. J., a white boy, age 7 years, was brought to my office for examination on March 22, 1939. Chief complaint was pain in abdomen and cough. The patient had always been well until about one week before at which time he began to complain of cough and malaise. It was assumed by his parents that he had a cold. On March 20, 1939, he was playing with his brothers in the barnyard. He was riding a calf about the yard and fell off. During that evening he was quiet and did not have an appetite for supper. He mentioned pain in abdomen and was put to bed. He vomited once that evening. The next day he remained quiet and complained of pain in abdomen. He vomited again that day and ate very little. He continued to complain of abdominal pain and was brought to the office for examination on March 22, 1939.

Examination revealed: temperature 101°, pulse 120. Skin was dry and cheeks were flushed. Chest and lungs were normal. No remaining evidence of infection. Heart was normal.

Abdomen: There was some distention. There was tenderness over the entire abdomen, most marked in middle and lower portions. More tenderness was elicited over the right side of abdomen. Rectal examination revealed marked tenderness on the right side of pelvis. No bogginess was noted.

Urine: albumin negative; sugar negative; acid reaction, acetone four plus, and diacetic one plus.

Blood: Hemoglobin (Sahli-Haskins) 73, 10.07 gm., red blood count 3.20, white blood count 25,400 and sedimentation rate (Westergren) 15 minutes 15mm, 45 minutes 89mm. Differential count: polymorphonuclear 89, small lymphocytes 10 and monocytes 1.

Differential diagnosis was: (1) acute appendicitis and (2) possible intraabdominal injury. I advised surgical exploration of the abdomen.

A small right rectus incision was made. The abdomen was filled with dark red blood. The appendix was normal and was left intact. A new incision was made in the upper left abdomen and the spleen located. There was a rent in the lower portion which was healing normally and from which there was no fresh bleeding. The rent measured about 6 cm. and was on the medial side of spleen. The spleen was of normal size. It was decided to leave the spleen in, since the wound was healing and the pedicle was unharmed. A citrated blood transfusion of 350 cc was given following the operation. The patient has made an uneventful recovery except for recurrence of an upper respiratory infection while in the hospital. This subsided and he was discharged on the twelfth day.

A recent examination made on April 5, 1941, revealed a healthy, normal boy. Weight 78 pounds, height 56½ inches, temperature 98. The spleen is not palpable nor tender. Blood: Hemoglobin (Sahli-Haskins) 82, 11.32 gms., red blood count 4.31, white blood count 8,950, and sedimentation rate 1/6. Differential count: polymorphonuclear 37, small lymphocytes 58, monocytes 1 and eosinophils 4.

COMMENTS

1. Relatively minor accidents in ordinary life may cause serious injury to spleen.
2. Onset of symptoms may be early or late, depending on the area and location of damage.
3. The general health of the patients was normal prior to accident and is normal at present.
4. From Case 2 one can assume that such injuries may occur and go unnoticed.

POSTGRADUATE LECTURES

During the year postgraduate courses of lectures are scheduled for the profession in our three states. In order that these courses may become well known, and be presented to the readers of this journal from month to month, they will be hereafter listed under the above heading with certain details pertaining to each as they may be received for publication. In this issue appear data which have been received descriptive of each course of the lectures. In the future issues it is expected that these will be supplemented as more information is received concerning each of them.

OREGON

Oregon State Medical Society

67th annual session and postgraduate assembly
Portland, September 3-6
Guest Speakers

Frank H. Lahey, M.D., President-Elect, American Medical Association, Boston, Mass.

Subject

Some of the Newer Developments in Medicine and Surgery.

George M. Curtis, M.D., Professor of Surgery, Ohio State University College of Medicine, Columbus, Ohio.

Subjects

1. Iodine and Calcium Metabolism in Thyroid Disease.
2. Recent Advances in Thoracic Surgery.
3. Recognition and Management of Acute Injury to Chest.

Henry J. Tumen, M.D., Assistant Professor of Medicine Medico-Chirurgical College, Graduate School of Medicine University of Pennsylvania, Philadelphia.

Subjects

1. Diagnosis and Treatment of Jaundice.
2. Management of Patient with Irritable Colon.
3. Clinical and Gastroscopic Features of Chronic Gastritis.

Milton B. Cohen, M.D., Cleveland, Ohio

Subjects

1. Nature of Allergy, Its Pathology, and Mechanisms of Its Production.
2. Management of Patients with Asthma, Hay Fever and Other Allergic States.
3. Growth Disturbances Produced by Allergy.

Portland Academy of Medicine

Portland, September 2-3
Guest Speaker
Ralph M. Waters, M.D., Professor of Anesthesiology
University of Wisconsin Medical School
Madison, Wis.

Subjects

1. The Service of Anesthesiology in the Modern Hospital, Within Operating Room.
2. Service of Anesthesiology in the Modern Hospital, Outside Operating Room.

This program will be coordinated with that of the 67th State Medical Society.

WASHINGTON

University of Washington Annual Graduate Medical Course

Seattle, July 14-18.

Guggenheim Hall, University of Washington, July 14-18. Lecturers for this course will be as follows:

Maurice G. Pincoffs, University of Maryland. Subject: Medicine.

Max Thorek, American Hospital of Chicago. Subject: Surgery.

John Saunders, University of California. Subject: Surgical Anatomy.

Howard C. Naffziger, University of California. Subject: Neurosurgery.

List of subjects appears on page 3.

PSYCHIATRIC INSTITUTE

FORT STEILACOOM, Sept. 1-14, 1941

Third regional postgraduate Institute for State Hospitals was held at the South Carolina State Hospital, Columbia, South Carolina from April 14 to 26. The Institute was under the sponsorship of the American Psychiatric Association through its Committee on Psychiatry in Medical Education, and was financed by a grant from the Rockefeller Foundation. The average daily attendance was fifty-five with a total of seventy-eight registered for the Institute. Sixteen states were represented. A variety of subjects was discussed including neuroanatomy, neuropathology, psychobiology, psychotherapy, neuroroentgenology, neuro-opthalmology, neuro-surgery, electroencephalography, clinical psychiatry, clinical neurology, and a group of related subjects.

Fourth Institute will be held at the Western State Hospital, Fort Steilacoom, Washington, from September 1 to 13, 1941. Those interested in attending the coming Institute should communicate with either Dr. William N. Keller, Superintendent, Western State Hospital, Fort Steilacoom, Washington, or Dr. Franklin G. Ebaugh, Colorado Psychopathic Hospital, Denver, Colorado.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-SEVENTH ANNUAL MEETING, PORTLAND, SEPT. 3-6.

PANEL DISCUSSIONS FOR ANNUAL MEETING

Oregon State Medical Society
67th Annual Session
September 3-4-5-6

MEDICINE

1. "Clinical Aspects of Chemotherapy."
   Panel Board: Norman A. David, Portland, Chairman; Roger H. Keans, Portland; Joseph P. Brennan, Pendleton.
2. "Deficiency Diseases and Vitamin Therapy."
   Panel Board: Frank R. Mount, Portland, Chairman; J. V. Straumfjord, Astoria; Donald E. Forster, Portland.
3. "Medical Problems Peculiar to the Aged."
   Panel Board: Eugene W. Rockey, Portland, Chairman; Homer P. Rush, Portland; Irvin R. Fox, Eugene.

SURGERY

1. "Treatment of Acute Head Injuries."
   Panel Board: Eugene W. Rockey, Poraland, Chairman; John Raaf, Portland; Ralph M. Dodson, Portland.
2. "Management of Acute Cholecystitis."
   Panel Board: Thomas M. Joyce, Portland, Chairman; Dean B. Seabrook, Portland; Martin A. Howard, Portland.
3. "Relation of the Surgeon to the State Industrial Accident Commission."
   Panel Board: Mr. Ralph E. Jackson, Claim Agent, Oregon State Industrial Accident Commission, Salem, Chairman; E. D. Lamb, Klamath Falls; Allen M. Boyden, Astoria.

ORTHOPEDICS

1. "Disabilities and Fractures of Knee-Joint."
   Panel Board: Richard B. Dillehunt, Portland, Chairman; Harry C. Blair, Portland; Gilbert J. McKelvey, Portland.
2. "Fractures of the Hip Joint."
   Panel Board: Otis F. Akin, Portland, Chairman; Charles R. McClure, Portland; A. Gurney Kimberly, Portland.

OBSTETRICS AND GYNECOLOGY

1. "Pelvic Tumors Complicating Pregnancy."
   Panel Board: To be announced later.
2. "Immediate and Delayed Repair of Pelvic Relaxation."
   Panel Board: To be announced later.

DERMATOLOGY AND SYPHILOLOGY

1. "Common Fungous Diseases and Their Treatment."
   Panel Board: Lyle B. Kingery, Portland, Chairman; Thomas S. Saunders, Portland; Leon F. Ray, Portland.
2. "Early Syphilis: Its Diagnosis and Treatment."
   Panel Board: Alfred H. Illge, Portland, Chairman; Joyle Dahl, Portland; John H. Labadie, Portland.

ALLERGY

1. "Therapeutics in Allergy."
   Panel Board: Merle W. Moore, Portland, Chairman; Robert L. Benson, Portland; Frank Perlman, Portland.

PSYCHIATRY

1. "Physiological Responses in the Anxiety States."
   Panel Board: D. C. Burkes, Portland, Chairman; Henry H. Dixon, Portland; Wendell H. Hutchens, Portland; John W. Evans, Portland.

RADIOLOGY

1. "Roentgen Therapy: Its Utilization in Malignancies and Inflammations."
   Panel Board: Frank E. Butler, Portland, Chairman; James B. Haworth, Portland; J. M. Hilton, Klamath Falls.
2. "Roentgen Study of Cholecystitis: Its Alteration of Normal Intestinal Gradient."
   Panel Board: William Y. Burton, Portland, Chairman; Dorwin L. Palmer, Portland; Sherman E. Rees, Portland.

STATE BOARD OF HEALTH

Postgraduate Course Given

The Oregon State Medical Society in cooperation with the Division of Maternal and Child Health of the Oregon State Board of Health conducted during the month of June a postgraduate course in Obstetrics and Surgical Pediatrics in ten centers of Oregon. The lectures and discussions were led by William J. Dieckmann of the University of Chicago and Herbert E. Coe, pediatric surgeon, Seattle, Washington. These men were selected because of their outstanding skill in their field and their known excellence as speakers. Local medical societies in cooperation wherever possible with local health departments are sponsoring the lectures in the individual centers. These centers include La Grande, The Dalles, Bend, Klamath Falls, Medford, Marshfield, Eugene, Salem, Astoria and Portland. This program is the second of its type conducted in the state. It has been developed following the enthusiastic response of physicians of Oregon to the program conducted in May, 1939.

Interpretation of Legislation

At the last session of the legislature the teachers examination was changed to require merely an examination for tuberculosis. Certain questions have arisen as to what constitutes acceptable evidence relative to freedom from tuberculosis. The regulations require that a tuberculin test made with specified quantity of either O.T. or P.P.D. The only way for this test to be made is by intradermal injections with 0.1 of a cc. of 1/1000 dilution of O.T. or by 0.1 cc. of P.P.D. No. 2 which contains 0.005 mg. of P.P.D. The patch tests or the Von Pirquet test do not meet the requirements of the regulations. If the tuberculin test is positive, the patient must have roentgenogram taken which is forwarded to the State Board of Health for interpretation, the physician holding the examination blank until the roentgen plate has been returned to him from the State Board of Health. He may then fill out the certificate and forward it to the county health department. A roentgen examination is acceptable without the intradermal test.

New Division Established

A new division of Mental Hygiene has been established in the Oregon State Board of Health. Curtis R. Chaffin, Past Assistant Surgeon of the United States Public Health Service, arrived in Portland June 19 to aid in the establishment of this new division. Dr. Chaffin is a graduate of the University of Texas Medical School and has had several years of postgraduate training in the San Antonio State Hospital, Texas, with Dr. Ebaugh in Denver, with the United States Public Health Service Hospital in Lexington, Kentucky and at Johns Hopkins University. This new division will work in close cooperation with the already existing facilities for mental hygiene.

Staff Member Returns

Floyd DcCamp, Director of Oral Hygiene with the Oregon State Board of Health, has returned from a year's leave of absence while he attended Harvard University.

Staff Member Honored

Miss Lucille Perozzi, Director of the Public Health Nursing Division, was elected Vice-President of the American Public Health Association, Western Branch, at its recent meeting in San Diego.

Change In Personnel

Mr. Curtiss M. Everts, Jr., has recently been appointed State Sanitary Engineer to replace Mr. Carl Green who has resigned to enter private consultative practice. Mr. Everts is a graduate of Texas A. and M. and Harvard University, where he received a degree of Master of Science in Sanitary Engineering.

STREAMLINING HEALTH REGULATIONS

The Division of Communicable Diseases of the Portland Bureau of Health announces, effective immediately, adoption of new quarantine regulations for the control of the common communicable diseases in the City of Portland. The new requirements will replace those that have been in effect in the city since 1935.

Changes in varying degrees have been made in the quarantine periods governing all diseases except smallpox and whooping cough, which remain the same as previously. The more important changes include the following:

1. Chickenpox: Isolation of patient reduced to seven days from appearance of the eruption and thereafter until all crusts have disappeared (formerly fourteen days).
2. Diphtheria: Quarantine period now twelve days and until two successive cultures from nose and throat, taken at least twenty-four hours apart, contain no virulent diphtheria bacilli (formerly fourteen days). Diphtheria continues to have a strict quarantine.
3. Measles: Isolation of patient reduced to seven days from appearance of the rash and until recovery (formerly fourteen days).
4. Mumps: Isolation period reduced to seven days and until swelling disappears (formerly fourteen days).
5. Scarlet fever: Quarantine period reduced to twenty-one days from onset of the rash and until discharges, if any, have ceased (formerly thirty days). Children excluded from school for an additional seven days. Adult wage earners are permitted to come and go from the premises.
6. Poliomyelitis and Meningococcus Meningitis: Quarantine period fourteen days from date of onset.
7. Smallpox: Remains fourteen days; immediate vaccination of all contacts required.
8. Whooping cough: Isolation period remains twenty-one days and until the cough has ceased.

Copies of the new regulations, which contain more detailed information concerning the isolation and quarantine of contacts, disease incubation periods, etc., may be obtained from the offices of the Bureau of Health, City Hall, Portland.

UNIVERSITY OF OREGON MEDICAL SCHOOL

Twenty-three University of Oregon medical school students, members of medical R.O.T.C., received orders to report to Camp Ord, Cal., June 20 for six weeks duty. Colonel R. W. Bryan, professor of military science and tactics, is in charge of the medical section, an annual training period for medical R.O.T.C. students.

At Fort Ord are: Neil C. Andrews, Ernest E. Banfield, Jr., Harry T. Butler, Carl W. Calhoun, Robert L. Camber, Robert H. Epler, Robert H. Gibson, Richard H. Goldsmith, Dugald H. Grier, Jr., Russell L. Guiss, Thomas S. Healy, Russell E. Hutchinson, Logan E. Jackson, Robert DeO Jenkins, Charles H. Jones, Howard L. Jones, Andres L. Karstens, John F. Larsell, Samuel F. Nebel, Winfield H. Needham, Alfred M. Stone, George E. Thompson and Harry Westberg.

Dean Richard B. Dillehunt attended sessions of the American Orthopedic association in Toronto.

Doctor of medicine degrees were conferred on 62 graduates by University of Oregon President Donald M. Erb, at the school's 53rd commencement on June 6.

Doctor of science degrees were conferred on Drs. Albert Edward Mackay and John Elmer Weeks in recognition of their excellent service to the medical school.

A. J. Carlson, University of Chicago physiology professor, gave the principal address which he called "A New Frontier in Medicine: The Problem of Sub-Clinical Disease." The red-faced, white-thatched Carlson was house guest of W. F. Allen, an old friend. Dr. Carlson was a luncheon guest at Reed college and was honored at dinner at the University club by faculty members.

R. C. Groesbeck gave greetings from the state board of higher education and Chancellor Frederick M. Hunter spoke.

Assistant Dean D. W. E. Baird announced a total of $28,160 in gifts and bequests to the schools in the past year.

Willis E. Smick, graduating senior, was announced winner of the Henry Waldo Coe award.

National board of medical examinations were held at the school June 23, 24 and 25. There were nine candidates for Part III, as follows: Verne L. Adams, Myrtle Creek, Ore. (Oregon); James R. West, Tacoma (Minnesota); Kenneth B. Jacques, Portland (Dartmouth); A. Darrel Berry, Seattle; George A. Woodruff, Baker, Ore. (College of Medical Evangelists); Franz Kirschner, Seattle; Dr. Raimond F. Clary, Santa Rosa, Cal. (Creighton); Carl M. McCandless, Jr., Tacoma (Harvard); Rudolph M. Crommelin, Jr., Portland (Creighton).

Ninth annual convocation of the department of nursing education was held May 17 in the medical school auditorium. Dr. Frank Munk, visiting lecturer at Reed college, was speaker and Ralph Couch, school secretary, presided. The class of 81 nurses went to Eugene in June for award receiving.

Alpha of Oregon chapter of Alpha Omega Alpha, honorary fraternity, announces selection of the following members: Frank LeCocq, Everett; Harold Holsinger, Nampa, Idaho; William Kintner, Seattle; Milton Pearl, Seattle; Leonard Jacobsen, Eugene; Dorothy White, Everett; Averly Nelson, Wenatchee, all seniors, and Mrs. Frances Murray, Seattle, Gordon McGowan, The Dalles, and Howard Varney, Powers, all juniors.

SOCIETY MEETINGS

EASTERN OREGON MEDICAL SOCIETY

Eastern Oregon Medical Society held its annual meeting May 26, at Pendleton. Officers elected for the coming year were: Lee B. Bouvy, LaGrande, president; Eugene Moore, LaGrande, vice-president; and E. S. Morgan, Pendleton, secretary-treasurer.

Papers were presented by four Portland doctors as follows: "A Peptic Ulcer May Demand Surgery," Louis Gambee; "Clinical Considerations in the Management of Rheumatic Fever," Howard Lewis; "Important Aspects in Treatment of Uterus Prolapse," Howard C. Stearns; and "Headache," Laurence Selling.

JACKSON COUNTY MEDICAL SOCIETY

Jackson County Medical Society met June 11, at the Central Point Grange. F. J. Moffatt of Medford was host, and also presented the paper of the evening.

MEDICAL NOTES

A "Physicians' Club" for the purpose of promoting educational programs has been organized in eastern Oregon and western Idaho. R. A. Tacke was elected general chairman, to be assisted by a committee composed of the following: Drs. Sarazin, Nyssa; Walker, Vale; Keiser, Payette; Whiteman, Cambridge; Davis, New Plymouth; Curtis, Weiser; and Palmer, Ontario.

Bruce L. Titus, formerly assistant superintendent of Fairview Home, Salem, has resigned from that institution and Ray M. Waltz, Salem, has been appointed to succeed him.

The Medical Discussion Club of Portland held meetings June 23 and 24 in Portland. Albert M. Snell, Head of Section in Medicine at the Mayo Clinic, was guest speaker. The titles of his lectures were: "Portal Cirrhosis Considered as a Deficiency Disease," and "Recent Advances in Gastroenterology."

John Seeley has become associated with Dean P. Crowell, Marshfield.

OBITUARIES

Dr. George F. Wilson of Portland died June 27, at the age of 83, of hemiplegia resulting from hypertensive cardiovascular disease. Dr. Wilson was Emeritus Professor of Surgery at the University of Oregon Medical School and had been President of the former Portland Medical Society (1890-91).

Dr. Felton D. Watts of Portland died June 17, at the age of 75, of coronary occlusion, hypertension and arteriosclerosis. Dr. Watts was graduated from the Wayne University College of Medicine in 1904, and had practiced otolaryngology in Portland since 1924.

Dr. Harvey J. Clements of Salem died suddenly on June 25 at the age of 72. The cause of death was coronary occlusion. Dr. Clements was graduated from New Orleans Medical College in 1892, and had practiced in Salem since 1911. He was always active in meidcal society affairs, and at the time of his death was president of the Physicians and Surgeons Hospital Association of Salem.

LEGAL MEDICINE

RIGHT OF A COUNTY MEDICAL SOCIETY TO DISCIPLINE MEMBERS

A recent decision by the District Court of Appeals in the State of California regarding the right of County Medical Societies to discipline members and to expel or suspend from membership in the society reiterates the general proposition of law that the Courts will not interfere with the medical society's right to expel a member after a fair trial on charges, according to the procedure established in the Constitution and By-Laws of the Society. (Smith vs. Kern County Medical Association, April, 1941.)

In this case a dispute had existed between Dr. Smith and the majority of the members of Kern County Medical Society for some time regarding the practices engaged in by the staff of Kern County General Hospital. The majority of the members of the county society maintained for a long time that the matter of carrying out medical practice in Kern County Medical Hospital was such that patients did not receive adequate service and prevented reasonable competition among physicians in the community.

In 1932 the membership of the county society passed a resolution to the effect that, since the manner of rendering service to patients in the said hospital conflicted with the principles of medical ethics of the American Medical Association, all members of the County Society should resign from the staff of Kern County General Hospital until such time as the institution is conducted in such a manner as to make it eligible to apply as an accredited hospital rating from the Council on Medical Education and Hospitals of the American Medical Association and the Committee on Hospitals of the American College of Surgeons. The resolution further provided that failure of any member of the county society to resign from the staff of the hospital would make such a member liable to disciplinary proceedings. The same general resolution was passed each year until 1939.

In 1932 certain charges were filed against Dr. Smith and in 1933 other written charges were filed against him. No action was taken on either written charge.

In 1935 written charges were made against Dr. Smith to the effect that he was violating the principles of medical ethics of the American Medical Association by disposing of his services under conditions that make it impossible to render adequate service to his patients and also that he disposed of his services under conditions which interfered with reasonable competition among physicians in the community.

These charges were duly served upon Dr. Smith and a time for hearing was set by the Committee on Grievances of the society. Dr. Smith did not appear at the hearing. The Committee recommended that Dr. Smith be expelled from the society. The Board of Directors of the society sustained the action of the Committee on Grievances and voted Dr. Smith's expulsion from the society. At a later meeting of the society the great majority of the members present voted to expel Dr. Smith. However, only 19 of the 38 members of the society were present at the meeting.

Dr. Smith appealed to the California Medical Association and the American Medical Association. Both appeals were decided adversely to him. He then brought a mandamus suit against the County Medical Society to compel the Society to reinstate him as a member.

The Court held that a majority of the membership was necessary to constitute a quorum and that, since a majority of the membership was not present at the society's meeting at which Dr. Smith was expelled, he was entitled to reinstatement as a member of the Society.

However, in deciding the case the Court gave a concise statement of the rights of Medical Societies to discipline membership. The court said:

> "* * * the courts will not interfere with the internal economy, rules of membership, rules of procedure or discipline of members of a strictly fraternal or social, unconstitutional, voluntary organization in which the members have no severable or divisible priority interest in any portion of its property and where the member's interest in its property is only an incident membership. * * * It is only when there has been an unreasonable and arbitrary invasion of private rights that the courts will interfere and then generally the inquiry will be limited to an investigation of the question of whether or not the society has violated its own rules of procedure. * * * In making such inquiry the Courts will be governed by these well established rules, that the constitution and by-laws of such voluntary association constitute a contract between the Association and its members * * *; that when the accused has been given a fair trial before the tribunals of the Society, according to the procedure established by it, the courts will not interfere; * * * that the proceedings before trial committees are not bound by technicalities; that membership in such an Association is not a right that can be demanded but is a privilege that may be drafted or withheld on the terms and conditions imposed by the Association. * * *"

The court also held that the fact that members of the Committee on Grievances and the Board of Directors were prejudiced against Dr. Smith would not prevent such Committees from performing their duties under the constitution and by-laws of the society.

Some members of the medical profession may have gotten the impression that the result of the decision in the antitrust suit against the American Medical Association and District of Columbia Medical Society prevented county and state medical societies from pursuing disciplinary proceedings against their members. That is not the effect of the antitrust decision and as a matter of fact the charge of the court to the jury sustained the right of medical societies to discipline their memberships for breaches of principles of medical ethics. However, the court did instruct the jury in the antitrust suit that, if the defendants were conspired to injure members or if the societies conspired to restrain trade, such action would be illegal.

The result of the antitrust suit and the above expressed case of Smith vs. Kern County Medical Association is to give the county and state medical societies power to discipline members, providing that the procedure outlined in the constitution and by-laws of the society is followed and provided that the action is not a conspiracy on the part of the people involved.

CLINICAL FORUM

PEDIATRIC PROBLEM

Mary E., age 2 1/12 years. First seen in consultation on the day of her admission to the hospital.

Chief complaint: Sleepiness, listlessness and inability to stand.

Past History: The child has always been perfectly well until three and a half months ago, when she had faucial diphtheria and was treated with 20,000 units of antitoxin on the second day of her illness. Her condition improved for three days following the antitoxin and then she ran a septic type of temperature for about two weeks, during which time the inflammation in her throat subsided. Laboratory work failed to reveal the cause of the fever. The w.b.c. was 22,000; 72 per cent polys.; widal, chest roentgenograms, urine, stool and blood cultures were negative. Chemotheraphy was of no evident help. Temperature subsided to normal, she gained weight and seemed perfectly well until the onset of her present illness two months later.

Family History: The mother has been unwell intermittently for several years and is now undergoing bed care. Data concernnig her illness are not available.

Present Illness: Three and a half weeks ago the child was observed to put her hand to her head and to act as if she did not feel well for a period of twenty-four hours. No further symptom was noted until two and a half weeks ago, when she began to be listless in the daytime and to sleep poorly at night. Increasing irritability and gradual diminution of appetite with mild constipation were noted. Ten days ago her physician examined her and found her temperature (rectal) to be 101°. No other physical abnormalities were noted at that time. Eight days ago she was again seen because of increasing irritability, and anorexia. Her temperature had been constantly elevated from 100° to 102° (rectal). She was fussy, cross and listless at times. Physical examination was unchanged. Her condition gradually grew worse and she was brought to the hospital in a semistuporous condition. During her illness there had been no coughing, vomiting, convulsion nor complaint of localized pain.

Physical Examination: The child is well developed and nourished though her tissues are soft and flabby. Temp. 102° (rectal), pulse 160, resp. 28 and slightly irregular. Color is good. She lies in a semistuporous state from which she can be roused only with difficulty and then only momentarily. Her gaze is fixed in space and only when directly stimulated does she look at the examiner. The left palpebral fissure is wider than the right and when she cries it becomes evident that the muscles of the left side of the face are definitely weak. No other palsies can be demonstrated. Pupils are dilated but react to light. Eye grounds are perfectly normal.

On percussion over the skull there is a slightly suggestive "cracked pot sound." Slight but definite nuchal rigidity is noted. Brudzinski's sign is equivocal and Kernig's sign is negative. Abdominal reflexes are absent. Knee jerks are present but sluggish. There is unsustained three or four jerk ankle clonus on both sides. There is a very marked tache cerebrale. The mouth shows slight swelling of dry and irritated gums around incisor teeth. Remainder of the examination is normal.

Laboratory Data: w.b.c. 21,000; 89 per cent polys.; 11 per cent lymph; r.b.c. 4,600,000; no stippled cells; urine negative; Mantoux 1/10,000 negative (read on day of admission).

Lumbar puncture at time of examination: Pressure 13 mm.; cell count 120/c mm.; 37 per cent polys.; 63 per cent lymph.

(*Continued on Page* 262)

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-SECOND ANNUAL MEETING, SEATTLE, AUG. 24-26

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-SECOND ANNUAL MEETING, SEATTLE
August 25-27

PROGRAM

General Headquarters, Olympic Hotel
Registrations, Spanish Ballroom
SCIENTIFIC AND BUSINESS SESSIONS

HOMER D. DUDLEY, President

PRESIDENT'S MESSAGE

The 1941 annual meeting of Washington State Medical Association to be held in Seattle, Olympic Hotel, August 24-27 will have much to offer physicians of the state, not only in entertainment but in the well chosen scientific program and business sessions of the House of Delegates. There will be time to play, see old friends and make new ones; and time to discuss many questions of the day vital to the national welfare and to medicine itself. In this issue there is published nearly all of the program. In it you will find interesting luncheons to attend, golf tournaments and a fishing derby, scientific sessions of interest to all members of the profession, and new and better scientific and technical exhibits.

Members of King County Medical Society stand ready to extend warm greetings and will play the host with a sumptuous buffet supper, music, refreshments and entertainment for all visiting physicians and their families. Mark this 1941 meeting down as a date, one that you cannot afford to miss. On behalf of the officers of the State Association I extend greetings and a cordial invitation to all physicians and their families to attend.

HOMER D. DUDLEY, *President.*

CONVENTION INFORMATION

This annual meeting will be held in Olympic Hotel, where scientific sessions, commercial, scientific exhibits, and Woman's Auxiliary will be housed.

REGISTRATION AND INFORMATION: Desks are located in the north end of the Spanish Ball Room, Olympic hotel. All persons, whether or not members of the Association, are requested to register immediately upon arrival. Registration secretaries will be on duty from 8 a.m. to 5 p.m. Monday, Tuesday and Wednesday, Aug. 25-27. Sunday, August 24, temporary registration desks will be located in the Spanish Lounge with clerks on duty from 1 to 4:30 p.m.

PROGRAMS: Convention programs can be obtained at the registration desks.

ANNUAL BANQUET: The annual banquet will be held at the Inglewood Golf and Country Club, Tuesday evening at 7 o'clock, August 26. Special cars and busses will be provided. Tickets may be obtained at registration desk.

WOMAN'S AUXILIARY: Headquarters for the auxiliary will be Olympic hotel. Auxiliary members are requested to register in the Junior Ball Room foyer.

SCIENTIFIC AND TECHNICAL EXHIBITS: All scientific and technical exhibits will be presented in the Spanish Ball Room. The exhibits will be open from 9 a.m. to 5 p.m., Monday, Tuesday and Wednesday.

EXHIBIT PRIZE AWARDS: First and second prizes will be awarded on Tuesday, Aug. 26, at 5 p.m., and Wednesday, Aug. 27 at 12:15 p.m. in the Spanish Ball Room. Prizes are awarded to physicians who hold the winning registration number, the tickets to be obtained after signing as a visitor at the technical exhibit booths. First prize: An excellent portable radio; second prize: Electric Telechron desk clock which registers the day of year and by minutes.

SCIENTIFIC SESSIONS will be held in the Olympic Bowl room and Parlor B.

HOUSE OF DELEGATES will meet in Parlor B, Tuesday, Aug. 26, at 8:00 a.m., and Parlor A, Wednesday, Aug. 27, at 3:45 p.m.

SUGGESTIONS AND CRITICISMS: Members are invited to present suggestions and criticisms to the officers and committees through the registration desk. They may refer either to this meeting or future annual meetings. They will be given full consideration by those concerned.

GOLF: The Grand Sweepstakes Tournament will be held Sunday, Aug. 24, beginning at 12 o'clock noon, Seattle Golf and Country Club. The annual golf tournament of Washington State Medical Golf Association will begin early Monday morning at Seattle Golf and Country Club with awarding of prizes at a dinner the same evening at the club.

FISHING DERBY: A gigantic Fishing Derby will be held on Elliott Bay beginning early Monday morning, Aug. 25. There will be many valuable prizes awarded to the winner at the Golf-Fish dinner, Seattle Golf and Country Club. L. W. Whitlow has charge of the breakfast. Those desiring to enter the Fishing Derby are requested to register at the registration desk Sunday, Aug. 24, or write to the Secretary, King County Medical Society, 118 Cobb Bldg., Seattle.

OLYMPIC HOTEL
All features of the meeting will be held here.

PROGRAM

SUNDAY, AUGUST 24

2:00 to 5:00 p.m.—Registration.

4:00 p.m.—Meeting of Committee on Medical Defense, Parlor D.

6:00 p.m.—Meeting of Board of Trustees, Parlor B. (Dinner)

6:30 p.m.—No-Host Golf Dinner. Grand Sweepstakes prize awards presented. Everyone invited. Junior Ball Room.

MONDAY, AUGUST 25

Registration, 8:30 a.m. to 5 p.m.

10:00 a.m.—Meeting of County Medical Bureau Managers, Parlor D.

4:30 p.m.—Conference of County Medical Society Secretaries, Parlor D.

7:00 p.m.—Banquet, County Medical Bureau Managers, Parlor C.

7:00 p.m.—Annual Dinner, Washington State Medical Golf Association, Seattle Golf and Country Club. Fishing Derby participants will also attend this dinner for awarding of prizes.

TUESDAY, AUGUST 26

8:00 a.m.—Meeting of the House of Delegates, Parlor B. Wilmot D. Read, Speaker, presiding.

SCIENTIFIC PROGRAM

All Morning Sessions in Olympic Bowl

9:10 a.m.—Homer D. Dudley, Seattle: President's Address.

9:30 a.m.—James E. Stroh, Seattle: Treatment of Urticarias.

9:50 a.m.—John Duncan, Seattle: Difficulties Encountered in Operations for Appendicitis.

10:10 a.m.—John C. Lyman, Walla Walla: Treatment of Chronic, Massive Ulcerative Infections of the Skin with Zinc Peroxide.

10:30 a.m.—Visit Exhibits.

10:50 a.m.—Leo J. Rosellini, Seattle: Practical Applications of Use of Large Quantities of Blood Plasma in a General Hospital.

11:10 a.m.—W. Ray Jones, Seattle: Microslide Diagnosis of Atypical Gonorrhea.

11:30 a.m.—Paul B. Nutter, Spokane: Indications and Value of Gastroscopy.

11:50 a.m.—Edwin G. Bannick, Seattle: General Status of Chemotherapy.

12:30 p.m.—No-Host Luncheon by Public Relations Committee, Junior Ball Room. Everyone Invited.

AFTERNOON SCIENTIFIC SESSIONS
Olympic Bowl Room

PANEL DISCUSSION OF HEAD INJURIES
Hale Haven, Seattle, Chairman

2:00 p.m.—Joseph Lynch, Spokane
2:20 p.m.—Conrad Jacobson, Seattle
2:40 p.m.—Paul G. Flothow, Seattle
3:00 p.m.—S. N. Berens, Seattle
E. D. Hoedemaker, Seattle
3:30 p.m.—Visit Exhibits

Olympic Bowl Room

SYMPOSIUM: TRAUMATIC CONDITIONS
Raymond L. Zech, Seattle, Chairman

3:50 p.m.—E. Olin Schreiner, Seattle: Care of Wounds of Face.

4:10 p.m.—Jesse W. Read, Tacoma: Suture of Severed Tendons of Hand.

SPANISH BALLROOM, OLYMPIC HOTEL
Scientific and Commercial Expositions will be held here.

4:30 p.m.—A. B. **Hepler**, Seattle: Care of Bladder after Spinal Cord Injuries.

4:50 p.m.—James **Blackman**, Seattle: Management of Crushing Injuries of Thorax.

Parlor B

OBSTETRIC PANEL DISCUSSION

R. D. Reekie, Spokane, Chairman

"Labors That Worry"

2:00 p.m.—(a) David H. **Johnson**, Tacoma: Disproportions: Pelvic; Fetal.
(b) E. B. **Brookbank**, Seattle: (Subject to come).
(c) Gordon G. **Thompson**, Seattle: Malpresentations.

3:30 p.m.—Visit Exhibits.

Parlor B

PEDIATRIC PANEL DISCUSSION

Jay I. Durand, Seattle, Chairman

3:50 p.m.—(a) Clarence L. **Lyon**, Spokane: Enuresis.
(b) D. M. **Dayton**, Tacoma: Common Cold.
(c) R. E. **Ramaker**, Seattle: Thumb Sucking and Dental Arch Defect.

5:45 p.m.—Drawing for prizes of those who have visited and registered at exhibits. Spanish Ball Room.

6:30 p.m.—Annual banquet for members and their wives given by members of King County Medical Society. Informal. Tickets obtained at Registration desk.

WEDNESDAY, AUGUST 27

Scientific Sessions

All Morning Sessions held in Olympic Bowl Room

9:30 a.m.—H. V. **Hartzell**, Seattle, and David **Metheny**, Seattle: Treatment of Intestinal Obstruction.

9:50 a.m.—Lester J. **Palmer**, Seattle, and George D. **Capaccio**, Seattle: Present Day Insulins.

10:10 a.m.—Fred J. **Jarvis**, Seattle: Sympathetic Injections for Treatment of Thrombophlebitis.

10:30 a.m.—Visit Exhibits.

10:50 a.m.—Roy J. **Popkin**, Tacoma: Diagnosis and Treatment of Peripheral Vascular Diseases.

11:10 a.m.—James M. **Nelson**, Spokane: Some Physiologic Aspects Relating to Surgery.

12:00 Noon—Installation George W. Cornett, Yakima, as President of Washington State Medical Association.

12:10 p.m.—Visit Exhibits.

12:30 p.m.—Phi Chi Medical Fraternity Luncheon, Parlor A.

12:30 p.m.—Luncheon sponsored by Washington State Medical Service Bureaus. Everyone invited. Junior Ball Room.

Afternoon Sessions

Olympic Bowl Room

SYMPOSIUM: TRAUMATIC CONDITIONS

R. D. Forbes, Seattle, Chairman

2:00 p.m.—Frank **Wanamaker**, Seattle: Treatment of Fractures of Lower Jaw.

2:20 p.m.—Roger **Anderson**, Seattle: Treatment of Compound Fractures.

2:40 p.m.—Alfred O. **Adams**, Spokane: Diagnosis of Peripheral Nerve Injuries of Upper Extremity.

3:00 p.m.—D. G. **Leavitt**, Seattle: (An anatomic demonstration) Treatment of Ununited Fractures with Bone Grafts.

3:30 p.m.—Recess. Visit Exhibits. Drawing of Prizes.

3:45 p.m.—Meeting of House of Delegates, Parlor A.

Olympic Bowl Room

SYMPOSIUM ON HEART CONDITIONS

C. E. Watts, Seattle, Chairman

3:50 p.m.—C. H. **Hofrichter**, Seattle: Care of Hypertensive Patient.

4:10 p.m.—Austin **Friend**, Seattle: Digitalis and Its Application to Heart Conditions.

4:30 p.m.—Robert F. **Foster**, Seattle: Symptoms and Differential Diagnosis of Luetic Heart Disease.

4:50 p.m.—Gayton S. **Bailey**, Seattle: Recognition and Treatment of Angina.

Parlor B

SYMPOSIUM ON INFANTILE PARALYSIS

Burton Brown, Tacoma, Chairman

2:00 p.m.—Charles M. **Larson**, Tacoma: Pathology.
Norman E. **Magnussen**, Tacoma: Treatment of Acute Phases
Leland E. **Powers**, Tacoma: Newer Developments of Epidemiology
Robert W. **Brown**, Tacoma: Neurologic Aspects.

3:30 p.m.—Visit Exhibits.

Parlor B

SYMPOSIUM ON EAR, NOSE AND THROAT

H. LeRoy Goss, Seattle, Chairman

3:50 p.m.—(Speakers and Subjects to come).

HOTEL RESERVATIONS

Visitors desiring reservations at Olympic Hotel should present their requests for the same to the manager of the hotel at an early date. One thousand rooms are provided with baths, circulating ice water and other accommodations.

Room rates are: single, $3.50 and up; double, $5 and up; twin beds, $6 and up. In making reservations state the room desired, and by whom you will be accompanied.

SEATTLE GOLF AND COUNTRY CLUB

WOMAN'S AUXILIARY

HEADQUARTERS, OLYMPIC HOTEL, SEATTLE

Sunday, August 24

REGISTRATION 4:00 p.m.-7:00 p.m., Olympic Hotel.
Registration Fee $1.00.
Tickets for golf or Salmon Derby and luncheon may be purchased at Registration Desk.

Monday, August 25

8:00 a.m.-5:00 p.m.—Registration.
8:45 a.m.—*Golf Tournament.* Send entry handicap to Mrs. D. H. Houston, 2605 Franklin Ave., Seattle.
12:00 noon—*President's No-Host Luncheon,* Olympic Hotel. Past Presidents are urged to attend.
2:45 p.m.—*Preconvention Board Meeting.* Junior Ball Room. All Board members urged to attend.
7:00 p.m.—*Smorgasbord (Supper).* Residence and garden of Dr. and Mrs. Martin Norgore, 1029 37th No.

Tuesday, August 26

8:00 a.m.-12:00 noon—Registration.
9:00 a.m.—*General Meeting.* Mrs. George E. Hoxsey, President, presiding.
Greetings. Mrs. W. A. Millington, President, King County Auxiliary.
Response.
Presentation of Guests.
Greetings. Dr. Homer D. Dudley, President, Washington State Medical Association.
Address. Dr. Jennie I. Rowntree.
Roll Call of Delegates.
Reading of Minutes. Mrs. S. H. Tashian.
Reports:
- President—Mrs. George E. Hoxsey.
- Recording Secretary—Mrs. S. H. Tashian.
- Treasurer—Mrs. Chauncey B. Jones.
- Auditing Committee.
- Corresponding Secretary—Mrs. Norman Bellas.

Chairman of Standing Committees:
- Archives—Mrs. E. L. Brinson.
- Exhibits—Mrs. Max Wright.
- Historian—Mrs. L. L. Lugar.
- Hygeia—Mrs. Martin Norgore.
- Legislative—Mrs. R. E. Ahlquist.
- Organization—Mrs. H. J. Whitacre.
- Press and Publicity—Mrs. G. J. Vandenberg.
- Program—Mrs. J. T. Rooks.
- Revisions—Mrs. V. G. Backman.

Report of Committee on Registration, Mrs. Ralph K. Eggers.
Report of Nominating Committee, Mrs. L. S. Roach.
Announcements.
Election of Officers.
1:00 p.m.—*Buffet Luncheon,* Sunset Club. Reports of Delegates to National Convention, Mrs. Ray W. Jones.
7:00 p.m.—*Annual Banquet.* Doctors and wives.

Wednesday, August 27

8:00 a.m. 9:00 a.m.—Registration.
9:00 a.m.—*General Meeting* (Continued).
Roll Call
Minutes of Tuesday Session, Mrs. S. H. Tashian.
10:30 a.m.—*Address.* Dr. Frank J. Clancy.
Final report on Registration, Mrs. Ralph K. Eggers.
Report of General Chairman. Mrs. W. A. Millington.
Report of Resolutions Committee.
Announcements.
11:30 a.m.-12:30 p.m. *Conference of incumbent and incoming State Chairmen with their respective County Chairmen.*
1:00 p.m.—*Annual Auxiliary Luncheon.* Junior Ball Room.
Installation of Officers.
3:00 p.m.—*Postconvention Board Meeting.*

TECHNICAL EXHIBITORS

(Incomplete)

John Wyeth and Brother.
General Electric X Ray Corporation.
E. R. Squibb and Sons.
Cutter Laboratories.
Consolidated Dairy Products Company.
Lederle Laboratories.
United Pacific Insurance.
Metropolitan Building Company.
White Laboratories.
Westinghouse X Ray Company.
Biddle and Crowther, Inc.
Sandoz Chemical Works.
Braley's Pharmacy.
Standard X-Ray Sales Company.
Wm. S. Merrill.
Mead Johnson & Company.
Ciba Pharmaceutical Products.
Fischer X-Ray Company.
Harrower Laboratories.
Carnation Milk Company.

Shadel Sanitarium.
J. B. Lippincott & Company.
Petrolagar Laboratories.
Mennen Company.
Gerber Products.
Fleet (Phospho-Soda).
Philip Morris.
Morning Milk Company.
Eli Lilly Company.
Holland Rantos Company.
M. & R. Dietetic Laboratories.
Galen Company.
Pet Milk Company.
Aetna Casualty and Surety Company.
Coca Cola Company.
Silens Shoe Store.
Shaw Supply Company.

HAVE YOU PAID YOUR REGISTRATION FEE?

All physicians of the state have received due notice that in accordance with recent legislative enactment every practicing physician is required to pay a five dollar annual registration fee before July 1 of each year. Failure, neglect or refusal to do so renders a license to practice medicine invalid. Furthermore, the delinquent registrants will be required to pay a ten dollar penalty which would automatically make the fee fifteen dollars after July 1.

The director of licenses announces that the Washington attorney general has advised that licensed physicians now serving with the United States army, navy or marine hospital service are exempt from payment of the five dollar annual license fee during the time they are in such services. However, when they return to civilian practice they will be required to pay the five dollar annual license fee for the year in which practice is resumed. In order to waive back fees and the penalty, it will be necessary that they present to the department of licenses an affidavit covering their service with the armed forces.

MEDICAL NOTES

Health Agency Opens. The full time public health unit which has been established at Bremerton by cooperation of the city, county, state and federal governments was opened July 1. The unit has been made necessary by the marked increase in population of Bremerton which has accompanied expanding defense activities.

Federal Security Agency recently sent an estimate to the Senate asking expenditure of $560,000 in federal funds to provide Bremerton with hospital facilities and $70,000 for a public health center.

Tuberculosis Association Meets. Washington Tuberculosis Association held its annual meeting at Wenatchee June 5-7. Prominent on the program were W. B. Penney of Tacoma, John E. Nelson and K. M. Soderstrom of Seattle.

Contracts Let. Contracts totaling $143,777 have been let for construction of addition to the Oakhurst Sanatorium at Elma.

Portland Bidder Low. Bid of a Portland contractor for construction of the new Cushman Indian Hospital at Tacoma was low. His bid was $998,443. Main hospital, one of several buildings to be constructed, will be six stories high with ground coverage of 384 by 55 feet.

Society Makes Recommendation. Kittitas County Medical Society has passed a resolution recommending appointment of a full time and a part time physician for the county. It was recommended that the physician have complete charge of the county medical program.

Health Officer Appointed. James E. Drake was appointed assistant city health officer at Spokane.

Ten Thousand Pensioners Aided in King County. Report of the manager of the King County Medical Service Bureau states that the first month of operation of the Old Age Assistance program saw 10,000 pensioners apply for medical aid in King County alone.

Hospital Staff Elects. Providence Hospital, Everett, held its annual staff meeting May 27. John E. Flynn was elected president, George Moore, vice-president and Vincent Meyers, secretary-treasurer.

Hospital Adds Improvements. Some remodeling and addition of a new elevator have been planned by St. Elizabeth Hospital of Yakima. It is expected about $30,000 will be spent.

Evans Elected. Donald G. Evans, State director of health, was elected president of the Western Branch of the American Public Health Association at a recent meeting in San Diego.

Buckner Heads Hospital Staff. H. T. Buckner of Seattle was recently named head of the surgical staff at King County Hospital, succeeding Richard J. O'Shea.

Weddings. A. George Hansen and Miss Eloise Sweet of Seattle were married in that city June 14. Paul O'Hollaren of Seattle and Miss Marie Skotem of St. Hilaire, Minnesota were married in Seattle June 17.

OBITUARY

Dr. William Alexander Moore of Tacoma died May 23, following a long period of illness. He was 62 years of age. He was born in New Brunswick, Canada, and received his medical education at McGill University Faculty of Medicine, Montreal, graduating in 1914. He came to Tacoma in 1916 and practiced until a few years ago when he retired on account of ill health.

IDAHO STATE MEDICAL ASSOCIATION

FORTY-NINTH ANNUAL MEETING, SUN VALLEY, 1942.

Hospital Drive Nears Completion. Subscriptions to the new Sisters' Hospital, Idaho Falls, have almost reached the $15,000 mark necessary for insuring development. It is planned to purchase the Spencer Hospital and install modern equipment.

Locations. N. H. Battles has opened an office in Idaho Falls. He comes from Logan, Utah where he has been doing E. E. N. T. work for a clinic.

OBITUARY

Dr. William Brigham Parkinson of Fairfield died May 26, aged 64. He was born in Morgan, Utah, December 24, 1878 and received his medical education at the University of Illinois College af Medicine, Chicago, graduating in 1903. He located in Fairfield in 1930 and had been county physician of Camas county for the past ten years.

CLINICAL FORUM

(*Continued from Page* 254)

Nonne plus; sugar 22 mg.; fine protein web on standing; culture negative; smear negative.

As the consultant in this case how would you outline the diagnosis, further study, treatment and prognosis for the attending physician?

Comments on Obstetric Problem Presented in June

In discussing this case there are two very necessary factors to be considered. Both undoubtedly were in the mind of the attending obstetrician, but he did not record them. One: was the baby lying O. L. A. Two: what was the estimated size of the baby?

If the infant was presenting an O. L. A. picture, an average fetus, possibly one a little above average weight, would pass through the pelvis as measured and as recorded by roentgenogram. One is often astonished by the size of a baby that will be born through a relatively small birth canal merely because the position is normal. Again, one is equally nonplussed by a prolonged labor or impossible delivery of a not-too-large baby through an apparently negotiable pelvis only because of an occiput posterior position.

Although measuring the gravid uterus from symphysis to fundus is far from accurate, still after doing it a few thousand times, at the same time palpating the body of the fetus, one is able to formulate valuable estimates of the probabilities of a given fetus to proceed through a certain pelvis. It is quite likely to go through, if an O. L. A. presents and the opposite if a posterior position obtains.

In this particular instance it would be wise to anesthetize the patient and see if the head could be fitted into the pelvis. The heart-breaking reality of this lies in the facts that, upon nearing the delivery date of a primipara with a questionable pelvis, and probably an occipitoposterior, there has been no attempt on "the part of nature" to engage the head. Since the cervix was long and thick, it is to be expected that medical induction would fail.

The above indicates clear-cut disproportion. This picture without exception presages a long exhausting first stage, a slow dilating cervix, a slower moulding and descending head, with more than a probability of arrest of advancement at any point. Delivery at this juncture entails forceps, version or cesarean, all presenting particular hazards. It would seem best for all concerned to do a cesarean before labor sets in.

Another commentator presents these views:

This case presents the problems of hypothyroidism, vomiting of early pregnancy, less than normal pelvic measurements and toxemia of late pregnancy. In regard to the less than normal pelvic measurements, the method of choice in dealing with it is to have a teleoroentgenogram made near term. Then, if the head is obviously too large to go through the inlet or the outlet, a cesarean section is indicated. In doubtful or borderline cases, a so-called "test of labor" should be tried. The patient is allowed to labor for twelve hours if the pains are strong and regular. In case the head has not entered the pelvis by that time, a cesarian section is indicated.

The most important problem in this case is toxemia. Two attempts to induce labor by medical means have failed. The question is now whether to attempt to deliver the baby immediately or wait until labor begins spontaneously. The safest procedure for the mother is the treatment of choice, regardless of the fetal mortality for that procedure. I think the lowest maternal mortality is in spontaneous deliveries. Since the toxemia is under control, I should keep the patient in the hospital until full term, which is expected in seven more days. In the event of more toxemic symptoms developing or after the expected date of labor has come and gone and nothing has happened, I would induce labor.

It has been announced that this case was terminated by low, cervical cesarian section. Both mother and baby did well postoperatively and recently appeared for a six weeks examination.

Comments on Pediatric Problem Presented in May

The problem in pediatrics suggests a physical change in the neck not resulting from or associated with illness or disease. The character of the swelling would seem to point to some abnormal blood collection, resulting from the rupture of a vein or venous plexus in the neck. Hematomas have occurred in the sternomastoid muscle of the newborn, resulting in such a mass. These are presumably caused by trauma and rupturing of blood vessels within the muscle. Rupture of a branch of the internal jugular could produce a blood mass as described.

I would obtain as much information on the blood clotting time as possible. Use vitamin K empirically and otherwise watch and wait. A malignant hemangioma might be considered and roentgen therapy given. Unless the latter is present, prognosis should be good.

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BOOK REVIEWS

DISEASES OF THE DIGESTIVE SYSTEM. Edited by Sidney A. Portis, B.S., M.D., F.A.C.P., Associate Clinical Professor of Medicine, Rush Medical College of the University of Chicago, etc. 176 illustrations, 852 pp., $10. Lea & Febiger, Philadelphia, 1941.

This comprehensive treatise occupies a place second to none. It follows the increasingly popular plan, consisting of articles on special subjects, each of which is written by an author who is especially interested in that subject. Chapters in the orthodox order of history, anatomy, and physiology, followed by a treatise on "The Interpretation of Gastrointestinal Tract Pain," constitute Part I. Part II, entitled "Etiologic Factors," has to do with parasitology, neuroses and various systemic disorders which produce digestive symptoms. Although this section is excellent in parts, it is, in general, too detailed for a text bearing the title "Diseases of the Digestive System." Parts III, IV and V consist of a systematic and detailed description of disorders of the digestive system. The authors of these sections are of unquestioned authority, and they present their subjects in a concise and comprehensive manner for practical interpretation and use by the reader. At the end of each chapter there appear references for a more detailed review of the subject. This book is to be highly recommended to students and to all those engaged in the practice of medicine.

R. L. KING.

THE STORY OF CLINICAL PULMONARY TUBERCULOSIS. By Lawrason Brown, M D., Late Director of Trudeau Sanatorium, etc. First edition, 411 pp., $2.75. The Williams and Wilkins Company, Baltimore, 1941.

This is the story of clinical tuberculosis largely compiled from lectures given to students of the Trudeau School of Tuberculosis. It had been the author's intention to make these lectures into a book, but failing health prevented him from completing the task. After his death the book was put together from lecture notes and the incomplete manuscript which he left. He did not get around to the telling of the story of the roentgen ray, nor use of surgical methods in tuberculosis, but these chapters were added by his friends. The first six chapters are lectures as he delivered them, modified somewhat, although retaining a bit of the lecture flavor. By a series of "firsts" in 1700, 1800 and 1900 he vividly acquaints readers with the practice and the working conception of tuberculosis in those periods. The story of the stethoscope, its invention and development, is extremely interesting and must have been born out of the author's special interest in this instrument. Anyone concerned professionally or personally with tuberculosis will derive a great deal of pleasure from this book.

B. F. FRANCIS.

CLINICAL ASPECTS OF THE ELECTROCARDIOGRAM INCLUDING THE CARDIAC ARRHYTHMIAS. By Harold E. B. Pardee, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College, etc. Fourth Edition Revised, 434 pp. $5.75. With 219 illustration and 102 figures. Paul B. Hoeber, Inc. Medical Book Department of Harper Brothers, New York, 1941.

Knowledge of interpretation of the electrocardiographic record in diagnosis of heart disease has been but slowly developed, due to the difficulty of correlating the record with structural and functional abnormalities of the heart. Earlier texts have been conveniently dogmatic for the beginner in this study but rather inadequate as an aid to interpret those tracings not falling into stereotype classifications. The author, whose name is closely identified with development of our knowledge of the electrocardiographic findings in acute coronary occlusion, discusses the subject material with a background of wide experience and correlates it with the best observations of various other important investigators in this field. The book is an excellent monograph on the subject, stimulating to the advanced student, but not particularly appealing to the beginner.

R. F. FOSTER.

BRUCELLOSIS (Undulant Fever). Clinical and Subclinical. By Harold J. Harris, M.D., Health Officer, Westport, N. Y., etc.; with foreword by Walter M. Simpson, M.D., F.A.C.P., Director, Kettering Institute for Medical Research, Miami Valley Hospital, Dayton, Ohio. With 12 colored and 44 black-and-white illustrations. 286 pp., $5.50. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York, 1941.

In 1937 Judge James T. Lawler of Seattle, awarded $1,946.50 to the plaintiff in a suit against a milk distributor because of undulant fever contracted from consumption of the distributor's milk. Tuberculosis in cattle is probably less important than brucella infection. About ten per cent of the population of the United States has become infected with the organism of undulant fever or, as it is sometimes called, malta fever. It is estimated that from eleven to twenty per cent of the cows of this country are infected. If any physician states that he does not see these cases he probably does not recognize the infection in many who consult him for a variety of vague and sometimes poorly described complaints.

These are just a few of the facts pointing to the growing importance of brucellosis and the necessity for more prompt recognition of the morbidity it causes. This book is an authoritative discussion of all phases of the subject and is a splendid contribution to the literature. It is an important work and its wide reading should be urged.

HEMORRHAGIC DISEASES, Photo-Electric Study of Blood Coagulability. By Kaare K. Nygaard, M.D., Former Fellow in Surgery, the Mayo Foundation, etc. Illustrated. 320 pp., $5.50. The C. V. Mosby Co., St. Louis, 1941.

The author has studied and worked extensively for the past ten years on the subject of blood coagulation and in this book has thoroughly covered the literature on the subject. It combines a mixture of physiologic, physical and clinical data.

The first two parts deal with the physiology of blood coagulation and methods of determining the coagulability of the blood with emphasis on the photoelectric principle. The third part is a practical clinical discussion of hemorrhagic diseases and may be recommended to clinicians as an excellent review of this subject. The chief value of the book seems to be the photoelectric study of blood coagulability and the complete description of this method which is highly technical.

E. G. BANNICK

NORTHWEST MEDICINE

JOURNAL OF OREGON STATE MEDICAL SOCIETY, WASHINGTON STATE MEDICAL ASSOCIATION
AND IDAHO STATE MEDICAL ASSOCIATION
ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION
Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879.
Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 8, 1917, authorized July 31, 1918.

Vol. 40, No. 8 AUGUST, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

LET US BE PREPARED

The present national emergency grows more serious hour by hour. It is quite apparent that this country has made its choice, has made its commitments and must now proceed along the road it has chosen. It is, therefore, necessary for us to consider the possibilities, to take an intelligent look at the near future and prepare fully for what is to come.

The medical profession has always responded promptly and generously with its services and advice in the time of disaster or emergency. Its members have served unselfishly with the armed forces and those at home have frely given of their time when public necessity has arisen. The present emergency will find the profession no less willing than it has traditionally been.

This time, however, there are a few differences which we must recognize. Modern warfare involves civilian populations, whole nations fighting the battles; battles of bombs, battles of nerves and battles of production lines. If this country is to engage in war, we will find that our own civil population may also be subjected to this new type of front line combat. For these eventualities we must be ready. It is said that one hour before the first bomb fell on London there was no plan or organization for disaster or emergency relief. One hour after the first bomb came down their organization was started and today is fully and splendidly developed. We may have the benefit of that experience and profit by their lessons. Indeed, we are already preparing for the care and protection of our population in event of any emergency.

State and local commissions have already developed the outlines of workable plans for emergency relief and are setting up organizations for all possibilities in case of war or other disaster causing injury to large numbers of individuals. Available hospital beds must be ascertained, emergency hospitals must be arranged for or some plan of expansion of present hospital capacity must be worked out. Ambulance service and other transportation must be provided for. Large numbers of volunteer drivers and attendants must be recruited and trained. First aid stations must be planned in various parts of the cities and many willing citizens must be trained in first aid and dressing work.

Even methods of communication other than by telephone must be worked out, since the entire telephone system could readily be put out of order in a very short time. Supplies must be made ready and their transportation to necessary points be arranged for. Nurses must be ready to respond when the call comes and many who have had training or who no longer are nursing must be given refresher courses so that they will be ready if needed. Needless to say, an air raid organization must be ready to function on a moment's notice, while police and fire departments must be aided in their essential work by a corps of volunteers.

These things may all sound fantastic to the average individual going peacefully about his daily work. Perhaps we are too busy just now to pay much attention to such goings on. Perhaps it will not happen here. Of that we cannot be sure. If we cannot be sure, then we had better be ready. Certainly it is far better to set up an organization which may never be used than to go complacently on with business as usual, up to the very moment of catastrophe as did France. If we wait that long it will be much too late. We must be ready if we are to meet war, emergency or disaster without hysteria or fear. Much of the problem is medical. Certainly the profession must see the very real need of its services. It is ready to join wholeheartedly in the preparations which are now going forward.

AN OUTSTANDING MEDICAL LIBRARY

During recent years the medical profession has been fully alive to the beneficent influences obtainable from an available medical library. When another is dedicated it is worthy of attention, regardless of where it is located. The latest to command the attention of the profession was the Yale Medical Library, built in addition to Sterling Hall of Medicine, which was dedicated in June. Recent contributions from a group of men connected with the medical school have increased the library to 85,000 volumes, making it one of the largest in the country.

The outstanding feature of the dedication was the tribute paid to Harvey Cushing who had presented to the library some 12,000 volumes which was said to be one of the most valuable medical historical collections assembled by one individual. Reference was made to special rare volumes which will help to make this library invaluable. It is said that this Cushing collection includes more than one hundred and sixty incunabula, an unusual number for individual possession. Another notable gift of some 10,000 volumes was made by John F. Fulton, a member of the medical faculty, containing rare books of unusual excellence. Gifts from other doctors helped to establish this notable medical library. While this library will be of most immediate use to the physicians of Connecticut, its existence will be a stimulus to the profession in all parts of the country who should be interested in establishing and maintaining working libraries for the benefit of their fellow practitioners.

DR. CASPAR W. SHARPLES

Some doctors possess the quality of leadership and eminence among their associates that makes them distinguished and influential. They not only impress their own generation by their outstanding abilities, but leave behind them abiding impressions which affect the lives and actions of their successors. Such a man was Caspar W. Sharples. He belonged to Oregon and Washington. Born at Eugene, where his father practiced medicine during a long lifetime, he was a graduate of the University of Oregon, and after obtaining a portion of his medical education at the medical school of that institution, received his medical degree at the University of Pennsylvania. After serving an internship he practiced in Seattle for a half century, where he established an enviable and abiding reputation as able physician and useful citizen. He was recognized by his fellow practitioners as a man of keen judgment, a dependable diagnostician and skillful in professional work. Not only was he a successful and leading surgeon, but he represented the typical family practitioner, thus serving not only in a medical capacity but as a friend and adviser of those consulting him for medical and other reasons.

His activities were manifold, few physicians participating in so many civic interests as commanded his attention. When Seattle General Hospital was in financial difficulties, he assumed the position of superintendent and by his wise guidance it reattained its former stable position. He was active as a director of Children's Orthopedic Hospital and Riverton Hospital for Diseases of the Chest. For a number of years as a member of the school board, he did not act as a seat warmer, but personally participated in its educational affairs and its physical constructions. His wise financial discernment was further exemplified by serving as a bank official. Participation in so many useful activities in addition to a busy medical practice is rarely observed in the medical profession, and is evidence of the unusual ability which he possessed for promoting the welfare of the community, as well as caring for an extensive medical clientele.

Dr. Sharples will long be held in affectionate remembrance by a host of friends in all classes of society with whom he came into intimate contact. Many younger doctors have grateful recollections of the advice and assistance which he rendered in their early days of practice. His life and the deeds which he accomplished can well serve as an inspiration to any physician who aspires to succeed in his profession and to lead a useful and worthy life.

THE OREGON MEETING

For its annual meeting every state association prepares a program which it is believed will be most fitting for instruction and entertainment of its members and friends. It is fortunate that all are not prepared on the same model. Individuality is of value in featuring a medical program, as well as in the characteristics of personality. In this issue appears the program for the annual session of Oregon State Medical Society. It introduces the double feature of guest speakers, who present papers on a variety of up-to-date medical topics which will comprise the morning program, and afternoon sessions which will feature panel discussions led by members of the society. Inspection of the program will reveal many interesting features which will demonstrate that attendance will be worthwhile for all Oregon physicians and their friends.

AMERICAN COLLEGE OF SURGEONS TO HOLD CLINICAL CONGRESS IN BOSTON

The thirty-first annual Clinical Congress of the American College of Surgeons will be held in Boston November 3 to 7, with headquarters at the Statler and Copley-Plaza hotels. The twenty-fourth annual Hospital Standardization Conference sponsored by the College will be held concurrently. About five thousand surgeons and hospital executives from all parts of the western hemisphere are expected to gather in Boston for these meetings, the program for which will include clinics and demonstrations in local hospitals and medical schools, as well as scientific sessions, conferences, medial motion picture showings and exhibits in the headquarters hotels.

The Chairman of the Board of Regents of the American College of Surgeons is Dr. Irvin Abell of Louisville and the President is Dr. Evarts A. Graham of St. Louis. The President-Elect is Dr. W. Edward Gallie of Toronto, who will be inaugurated at the presidential meeting and convocation to be held the evening of November 3 in Symphony Hall, when several hundred initiates will be received into the fellowship of the College. In charge of local arrangements for the Clinical Congress is a committee of Boston surgeons headed by Dr. Leland S. McKittrick, Chairman, and Dr. Richard H. Sweet, Secretary.

ORIGINAL ARTICLES

CEREBRAL BIRTH INJURY*

M. G. Peterman, M.D.

MILWAUKEE, WIS.

In a recent discussion on the use of pituitary solution in labor De Lee[1] said, ". . . I wanted to make a plea for the baby's life, immediately, and for the integrity of its brain in the future." The greatest hazard for the infant is the process of being born, particularly the second stage of labor. The mortality among newborn infants has been reduced to a remarkably low point in this country but it is not the mortality which concerns us now. It is much better that an infant die than that he live an incurable cripple, mental or physical.

INCIDENCE

Mammals, such as dogs, born with a solid skull, do not suffer intracranial hemorrhage or injury during delivery. In the human about 12 per cent of all full term newborn infants show blood in the spinal fluid.[2] Seventy-five per cent of the premature infants have blood in the spinal fluid at birth.[3] Thirty-five per cent of all newborn infants, 80 per cent of all first born, and 100 per cent of all born of abnormal deliveries have a nystagmus.[4] These findings indicate what Ehrenfest called "physiologic trauma" but it is trauma nevertheless and may often leave permanent sequelae. Then, too, intracranial hemorrhage may be subpial or subdural or there may be multiple petechiae having no communication with the subarachnoid space which makes the incidence higher than 12 per cent.

From 40 to 65 per cent of deaths in newborn infants are due to intracranial injury. More than 50 per cent of deaths in premature infants are due to intracranial hemorrhage. In 50 per cent of all necropsies on newborn infants lacerations of the dural septa are found, usually in the tentorium cerebelli. With greater care and better technic in postmortem examinations the percentage of intracranial hemorrhage and dural tears found seems to increase. The cause of this cerebral injury is usually excessive molding and distortion of the head, uneven distribution of venous blood, and the sudden change from the high uterine to the much lower atmospheric pressure. The more premature the infant the softer his cranial bones, the less firm the union of the sutures, and the greater the fragility of his blood vessels. Therefore, the higher incidence of intracranial injury in the immature and premature infant.

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*Read before the Twenty-second Annual University Graduate Lecture Course, Seattle, Wash., July 18-22, 1938, and revised to date.

[1] De Lee, J. B.; J.A.M.A.: Use of Solution of Posterior Pituitary in Modern Obstetrics, 115:1320-1324, Oct. 19, 1940.

[2] Sharpe, W. and Maclaire, A. S.: Intracranial Hemorrhage in Newborn. J.A.M.A. 86:332-338, Jan. 30, 1926.

[3] Glaser, J.: Cerebrospinal Fluid of Premature Infants, with Special Reference to Intracranial Hemorrhage and Pigmentation. A.M.J. Dis. Child. 36:195-247, Aug., 1928.

[4] Ehrenfest, H.: Can Intracranial Birth Injuries Be Prevented? J.A.M.A., 92:97-99, Jan. 12, 1929.

HEMORRHAGIC DIATHESIS

Another factor in the causation of intracranial hemorrhage in the newborn is hemorrhagic diathesis. Recently it has been discovered that most hemorrhagic disease in newborn infants is due to a prothrombin deficiency which can be promptly controlled with the administration of vitamin K. If cerebral birth injury is extensive, symptoms may develop immediately. Whether there has been injury at delivery or not, in hemorrhagic diathesis the bleeding develops about the second day of life, coincident with a drop in the prothrombin time.[5] The more etenxsive the preceding injury, the greater will be the subsequent hemorrhage.

SIGNS AND SYMPTOMS

The signs and symptoms of cerebral birth injury and/or hemorrhage depend upon the location and extent of the injury. Lesions above the tentorium, especially over the cerebral hemispheres, may produce no immediate symptoms. It is only after three or four months that delayed cerebral development may become evident in these infants. Lesions below the tentorium usually affect the vital areas in the medulla, causing immediate respiratory difficulty, apnea or impaired swallowing. The most common immediate symptoms and signs of cerebral birth injury and/or hemorrhage are cyanosis, apnea or irregular breathing, difficulty in starting respiration, somnolence or apathy, refusal to suck, frequent vomiting, twitchings of the face or extremities, convulsions, spasticity, subnormal temperature or high fever. There may be marked pallor and flaccidity. The Moro embrace reflex is usually absent or unilateral.

The subsequent or later signs are difficulty in feeding, vomiting, increasing constipation, delay in development such as holding the head, sitting alone, walking and talking. Hemiplegia, diplegia or quadriplegia may develop. Hydrocephalus may be a sequela. Crying spells or continuous crying and irritability, temper tantrums and behavior difficulties are commonly found. Over 16 per cent of convulsions in childhood are due to the residue of cerebral birth injury.

In a follow-up of fifty children with known birth injury, Smith found that 62 per cent were uneducable. Of the entire group 22 per cent were idiots, 40 per cent imbeciles and 16 per cent morons. Only 22 per cent were normal. Schroeder[6] feels that a high percentage of juvenile delinquencies, behavior problems, sex offenders and degenerates are the result of cerebral birth injury.

ANOXIA

Among the less well known cerebral birth injuries are those neurologic sequelae of apnea and anoxia. Schreiber[7] has nicely presented a schematic representation of the correlation between the incidence and extent of apnea and the occurrence of cerebral symptoms. In an explanation of his diagram Schreiber said:

> "The 'wheel' is set in motion by the initiation of labor. The extent of its rotation before birth varies in every case, depending upon the occurrence of such unpredictable factors as the incidence of natural birth difficulties; the weight, second stage metabolism and blood oxygen capacity of the mother, and, in addition, her individual susceptibility to the drugs and anesthetics employed to abolish pain.
>
> "The temperature existing in the mother and in her environment during labor and delivery must be considered. A further flip of the wheel by a depressing dose of an analgesic drug may spell the difference between a normal and a permanently damaged baby, if the vital line is crossed. It appears to me that the effect of chance, in some of the cases studied in which anesthetics and analgesic drugs have been employed in labor, has been allowed to participate to such an extent as to be somewhat disturbing to the professional conscience.
>
> "Since apnea is a clinical indication of anoxemia, it must be regarded as dangerous to the newborn infant, if anoxemia is shown to be dangerous in itself. The most vital and rapid effect of anoxemia is on the brain, where isolated groups of cells may quickly die, if there is an oxygen want (anoxia) in the tissues. Such localized cell death is irreparable and can be seen microscopically if the baby perishes. However, these localized areas of necrosis resulting from cerebral anoxia do not necessarily cause the death of the fetus or infant. In case of survival the clinical evidences of localized necrotic lesions or their resultant intracerebral scars and atrophy are neurologic disturbances, whose pattern depends on the location and extent of the damaged areas.
>
> "Since the analgesic drugs employed during labor are a frequent cause of dangerous apnea in the newborn, it seems that, if brain damage is later found in cases in which considerable analgesia has been used, this injury can properly be ascribed, either wholly or in part, to the optional drugs that have been given to the mother in labor."

The severity of the symptoms depends upon the location and amount of cerebral tissue injured.. This is, of course, dependent upon the duration of the anoxemia.

Cole, Kimball and Daniels have well demonstrated what Irving, Berman and Nelson[8] reported in 1934.[9] Cole and his coworkers[9] concluded that:

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[5] Waddell, W. W. Jr. and Lawson, G. M.: Hemorrhagic Diathesis of Newborn. J.A.M.A. 115-1416-1421, Oct. 26, 1940.

[6] Schroeder, P. L.: Behavior Difficulties in Children Associated with Results of Birth Trauma. J.A.M.A., 92: 100-104, Jan. 12, 1929.

[7] Schreiber, F.: Apnea of Newborn and Associated Cerebral Injury. J.A.M.A. 111:1263-1269, Oct. 1, 1938; Neurologic Sequelae of Paranated Asphyxia. J. Pediat., 16:297-309, March, 1940.

> "(1) The most important single factor in the etiology of neonatal asphyxia is prematurity. (2) The next most important factor is the trauma of labor, whether it is the normal forces of normal labor or whether it is accentuated by dystocia and operative delivery. (3) Sedatives in any amount definitely increase the incidence of asphyxia in the baby in direct proportion to the amounts given. (4) General anesthesia in any amount definitely increases the incidence of asphyxia in the baby in direct proportion to the duration of the anesthesia."

CEREBRAL EDEMA

Another type of cerebral injury is edema of the brain. This may be the result of drugs given the mother at delivery or to the forces of labor. In my experience the barbiturates and particularly nembutal are the most common offenders. The edema usually produces lethargy and hypotonicity which lasts for twenty-four to forty-eight hours. If it is extensive or severe, it impairs cerebral circulation and leaves the same sequelae as does anoxemia.

PREVENTION

Treatment of cerebral birth injuries begins with prevention which is entirely in the hands of the physician who delivers the baby. A rapid, precipitate, so-called, "easy" delivery with a sudden change of pressure may cause a rupture of cerebral veins or multiple petechiae in the pia. The long, hard second stage with excessive forced molding does more damage than forceps judiciously applied. I have seen a number of birth injuries after cesarean section. In most of these there had been a trial labor.

It is not possible to prevent hemorrhagic diathesis in the newborn by feeding the mother a diet rich in vitamin K. It is advisable, however, to give vitamin K concentrate before delivery, particularly to primiparae or to those women in whom difficult delivery is anticipated. It is good prophylaxis to give every newborn infant vitamin K concentrate by mouth within twenty-four hours after delivery. One dose of 1 cc. for prophylaxis is sufficient.

The use of anesthetics and sedatives in delivery requires the greatest discretion.

IMMEDIATE TREATMENT

Immediate treatment of the infant with cerebral injury is absolute rest with the head elevated. The infant should not be bathed or handled. He should be fed with a dropper and not disturbed.

Apnea or anoxia must be treated immediately with mouth to mouth breathing and with oxygen and CO_2 to restore normal color and breathing as rapidly as possible. Artificial respiration by means of swinging the infant should never be used. After the upper respiratory tract has been cleared of mucus, amniotic fluid or meconium, oxygen and CO_2 must be introduced into the lungs. The body temperature must be kept at 99° to 100° F. by artificial heat if necessary.

If hemorrhage is suspected a spinal tap should be done. This may or may not confirm the diagnosis. If it does, the gravity of the problem is realized. If blood is found, the tap should be repeated daily to remove the blood before it coagulates. Vitamin K should be given immediately. There has been considerable argument concerning spinal drainage in cerebral birth hemorrhage. However, if the blood is present in the subarachnoid space, it is acting as a foreign body and an irritant. It cannot be absorbed but will eventually coagulate and become organized. The clot may then become fibrosed, cystic or calcified. If the blood is drained off, these eventualities are eliminated. The cerebrospinal fluid tends to circulate to any point of injury along the spinal canal.[10] Therefore, spinal drainage will cause new fluid to be formed and this will tend to carry the blood to the site of the lumbar puncture. About all we can do for the infant with cerebral hemorrhage or injury must be done in the first twenty-four hours.

LATER TREATMENT

Probably the most serious of the sequelae of cerebral birth injury is recurring convulsions. Usually these begin shortly after the injury and gradually decrease in frequency and severity. However, they may not start for several years. In one of my cases of cerebral birth injury, the convulsions did not start until the child was nine years of age. In infants the convulsions are usually generalized. In older children the first convulsions may be Jacksonian in type but eventually they become generalized major seizures. The most effective treatment is phenobarbital. The dosage must be divided during the twenty-four hours and should be increased until the convulsions are kept under control. The drug must be continued at least a year after the last convulsion.

The child with spastic paralysis should not be neglected. There are enough brilliant results of reclamation among these unfortunate victims to give parents a heartening encouragement. If curative workshops and physical therapy are available, the patients should be given systematic training. If expert physical therapy and vocational guidance are not available, the parents may carry on with the aid of such books as Girard's[10], "The Home Treatment of Spastic Paralysis." The spastic child does very well with hydrotherapy. Before starting exercises, massages, occupational therapy and training, the general health of the child must be investigated. Visual and auditory defects must be corrected as far as possible. The nutrition must be well maintained. Orthopedic surgery and appliances may be necessary to improve function in spastic extremities.

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[8] Irving, F. C., Berman, S. and Nelson, H. B.: Barbiturates and Other Hypnotics in Labor. Surg., Gynec., Obst. 58:1, Jan., 1934.

[9] Cole, W. C. C., Kimball, D. C. and Daniels, L. E.: Etiologic Factors in Neonatal Asphyxia. J.A.M.A. 113: 2038-2044, Dec. 2, 1939.

SUMMARY

May I make a plea for more consideration of the infant in obstetrics. Every newborn infant is entitled to a careful, complete examination and to something more than adequate nursing care thereafter. Particular attention must be paid to the infant's color, breathing and reactions.

In the older child who is brought to you because of convulsions, delayed development, speech disorders or behavior problems, a detailed history of his delivery and subsequent development is the most valuable part of your examination.

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[10] Girard, P. M.: Home Treatment of Spastic Paralysis. J. B. Lippincott Co., Philadelphia, 1937.

GLUCOSE-INSULIN TREATMENT IN HYPEREMESIS GRAVIDARUM*

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Pernicious vomiting or hyperemesis gravidarum is a toxemia of early pregnancy and is characterized by nausea, vomiting, dehydration, ketosis, starvation, hepatic derangement and neurosis.

There have been many theories advanced in an attempt to prove the cause of pernicious vomiting but no single one has as yet been fully accepted.

Katz and Kaufman contend that it is a corticoadrenal insufficiency; J. William Finch holds to an allergic reaction of the patient to secretion of her own corpus luteum. Also theer are those who feel the cause to be toxins of fetal origin, gastrointestinal origin, or even disturbance of endocrine balance. There are dozens of other theories by various authorities but again evidence is insufficient for proof.

The carbohydrate deficiency theory as applied to hyperemesis gravidarum was first suggested by Ewing, Rand and Underhill[1] in 1910 and a few years later Titus[2] and Harding and Duncan[3] elaborated on this treatment. However, regardless of the origin of the trouble, it is a recognized fact that there is profound disturbance in carbohydrate metabolism and that this is directly responsible for the symptomatology of pernicious vomiting. It is a generally accepted fact that toxemia is the result of some disturbance in the maternal metabolism. I believe that any other abnormal condition, such as endocrine imbalance, gastrointestinal disturbance, allergic reactions or fetal toxins only serve to aggravate the already unstable or disturbed carbohydrate metabolism of the pregnant patient.

It has been definitely proved that the nutrition of the fetus is dependent on glycogen that is stored in the placenta until the fetal liver assumes its physiologic functions. This sudden and increased demand for glycogen by the fetus and uterus is often more than can be supplied by the mother. If, at this same time, there is enough nausea and vomiting to interfere with ingestion of the proper amount of carbohydrates in the maternal diet, the exogenous carbohydrate supply will be insufficient to meet the increased demand for glycogen and thus the maternal hepatic glycogen stores must necessarily be utilized to meet this deficiency. By this process the maternal liver is robbed of its glycogen, which is already at a low ebb during pregnancy. Thus with these two actions taking place simultaneously, that is, lessened intake of glycogen and increased consumption on the part of the placenta and fetus, the liver is very soon depleted of its glycogen. It is then not able to perform its detoxifying functions efficiently and the various toxic substances in the body, which ordinarily would be neutralized under normal conditions, are now allowed to circulate, develop and produce toxemia. Thus a vicious circle is developed: because of the vomiting there is a lessened ingestion of carbohydrates; there is a growing demand on the part of the fetus for more glycogen, and the depleted liver becomes less and less able to supply or retain its glycogenic store or to perform its detoxifying functions. This leads rapidly to the condition known as hyperemesis gravidarum.

In this condition we find a liver depleted of its glycogen and it now begins to undergo fatty degeneration. This is followed soon by necrosis. These two changes are the most constant and characteristic of any postmortem findings. This pathology is believed to be due more to starvation than to any specific toxin. It has been shown by Opitz that similar lesions can be produced by prolonged starvation. The blood chemistry in these toxic cases coincides closely with degree of toxicity and the hypoglycenic tolerance curves of the toxic patient are quite analogous to those found in cases of starvation. Other body tissue changes such as fatty degeneration of the convoluted tubules of the kidneys and fatty degeneration of the heart muscle I believe to be of secondary nature and a result rather than a cause. There is frequently present oliguria or even anuria due to the restricted intake or vomiting of fluids. The urinary excretion of ketone bodies is diminished and ketosis is established. Waste products are retained and the serum nonprotein nitrogen levels are eceexdingly increased, due to the renal insufficiency and dehydration.

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*Read before a meeting of Washington State Obstetrical Society, Seattle, Wash., April 5, 1941.

[1] Underhill, F. P. and Rand R. F.: The Peculiarities of Nitrogenous Metabolism in Pernicious Vomiting of Pregnancy. Arch. Int. Med. 5:61-91, Jan., 1910.

[2] Titus, P., Givens, F. H.: Intravenous Injections of Glucose in Toxemia of Pregnancy. J.A.M.A., 78:92-98, Jan. 14, 1922.

[3] Duncan, J. W. and Harding, V. J.: A Report on the Effect of High Carbohydrate Feeding on the Nausea and Vomiting of Pregnancy. Canad. M. Assn. J., 8:1057-1069, Dec., 1918.

With the foregoing findings and conclusions as a basis I began my investigations of hyperemesis gravidarum in 1935. Since that date I have treated successfully nine cases, four of which I will review in detail.

CASE REPORTS

Case 1. White woman, age 22. This case was referred to me at four months pregnancy. Her ordinary weight was 142 pounds. Upon entrance to hospital she weighed 99 pounds. She was extremely emaciated and dehydrated. Blood pressure 90/76. Rapid heart, dry tongue, scanty urine and vomiting eight to fifteen times per hour day and night. She had had an abortion two years previously because of pernicious vomiting. Urine was very scanty, Sp. Gr. 1.028. Blood sugar 50. Treatment consisted of intravenous 10 per cent glucose in saline twice daily for three days. By that time urine had increased in volume to about forty ounces but contained four plus sugar. Patient was in half comatose condition with no relief from nausea.

On fourth day the seventh quart of glucose was given intravenously, followed in twenty minutes by an injection of 25 units of insulin. This procedure was repeated again that evening and again the following morning. About one-half hour after the third injection of insulin the patient experienced a moderate insulin shock. Immediately 25 cc. of 50 per cent glucose was given intravenously and within a half hour the vomiting had ceased, the patient was conscious and more alert than for the whole five days that I had her under my care and she immediately called for food. The patient did not vomit any more and there was only a trace of nausea. She carried to full term and delivered a normal child.

Case 2. Was a replica of the first one. She had an abortion two years previously because of hyperemesis gravidarum although she was not as emaciated or dehydrated as case 1. The nausea and vomiting were equally severe and the results of treatment were nearly as startling as the first case. Her vomiting was relieved on the fourth day following the third insulin treatment.

The next two patients were referred to me as being hopelessly ill and with the familiar request for abortions. Treatment results in these two cases were exceedingly satisfactory, one being entirely relieved of all nausea in five days and the other in seven days.

The next four cases were primiparae and treatment was started between the ninth and thirteenth weeks of pregnancy. The average amounts of intravenous therapy were seven and one-half liters of 10 per cent glucose in saline with eighty units insulin. In this series there was complete relief of all symptoms by the end of six or seven days treatment and the pregnancies carried to full term.

The ninth case came under my care in December, 1940. This was a primipara, age 31 years, a graduate nurse, three months pregnant with a history of eight weeks vomiting, in bed the entire eight weeks. She was extremely dehydrated and emaciated, having lost thirty pounds in weight. It required three days of two liters daily of 10 per cent glucose in saline to produce a four plus sugar in the urine. However, on the fourth day, after the second injection of twenty units insulin the patient experienced a definite insulin shock and was partially unconscious for twenty minutes. The intravenous of 25 cc. of 50 per cent glucose immediately revived her and within two hours she called for food, which was retained. She had no further vomiting, although a slight nausea persisted for twenty-four hours. She left the hospital on the seventh day and has had no recurrence of either nausea or vomiting.

The tenth case entered the hospital March 28, 1941, having been in a hospital in Oregon for two weeks. Examination revealed a ten week pregnancy in a very emaciated, dehydrated patient. She had been vomiting for six weeks and had lost thirty-two pounds. This patient required twelve liters of 10 per cent glucose in saline intravenously before any sugar showed in the urine. Following this I was able to obtain a moderate insulin shock with the third insulin injection of twenty units. With the onset of shock, 25 cc. of 50 per cent glucose was administered intravenously and within an hour the patient called for solid food which was retained. She remained in the hospital four more days for observation, ate a full solid meal four times daily and suffered no further nausea or vomiting.

A perusal of literature reveals that a similar form of treatment has been tried by various authors. As early as 1924 Thallniner, Lequax and Laudot[4] at the Society of Gynecology in Paris tried a similar treatment. Their method was to give 250 cc. glucose in saline intravenously twice daily and when the injection was half given to inject ten units of insulin. Barkelmann and his student Reinicke[4] used the same in 1935 and 1936 with good results. In 18 cases reported by Waters[4] vomiting ceased in 24 hours; 14 of his 18 cases improved upon the first insulin injection.

In three of my cases I mixed my insulin, ten units in a liter of 10 per cent glucose in saline and gave the combination intravenously but I believe my best results have been obtained by increasing the sugar content to a maximum and then breaking down by subcutaneous injections of insulin.

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4. Chatillon, F.: Lé traitment des vomissements graves de la grossesse (en particulier de ceux survenant tar divement), Rev. franc. de gynec. et d'obst. 34:465-474, Aug., 1939.

PRACTICAL AND INEXPENSIVE PLASMA BANK*

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Mildred Porter, M.S.
Clyde R. Jensen, M.D.
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The use of blood and plasma banks has become very common in the last few years, and many hospitals are operating them successfully. If any one without previous experience seeks to establish a plasma bank, and in preparation for this inspects some already established in other hospitals and consults the available current literature on the subject, he will soon realize that the details of operation vary greatly from one institution to another. It would appear that there is no general agreement between many institutions upon some of the details, and one is likely to be quite confused in attempting to choose among several different systems.

The present paper is intended as a brief description of the technical details of operation of a blood and plasma bank established in a county hospital of 450 beds, operating in a community of approximately 400,000 people. The hospital is not associated with a medical school and has no private endowments. It is a strictly charity institution and is operated entirely with funds contributed from county and state sources. The county and state in question are not affluent at this particular time and do not have extra or unusual funds available for the operation of the hospital or the conduct of special research work. All of these factors are more or less basic in determining certain features of the operation of the plasma bank as well as the rest of the hospital. In other words, funds are limited from which to undertake new procedures and expenses must be kept down very carefully. This presentation is offered in the spirit that some of it may be of value to other hospitals in comparable situations.

In August, 1939, we were storing small amounts of unused transfusion blood. This could not be considered as a "blood bank" in the ordinary usage of the term, because the amount so stored was only a small amount of the total used daily in the hospital, most of which was used promptly according to the usual procedures in connection with whole fresh blood transfusions. As unused stored blood aged, it was converted into plasma, but the amount so treated was very small and could not in any sense be regarded as a plasma bank.

As the use of plasma gradually increased throughout the months in keeping with the tendency elsewhere in the nation, and as our hospital became more adept in securing donors from the community, more and more blood was drawn for storage and so utilized as plasma. In other words, for us it has been a gradual transition, a gradual drift, from the stage of using only fresh blood for transfusions to that of having in operation a reasonably well organized blood and plasma bank, a transition which has occurred in many steps over a period of two years rather than as a single step taken at one time. This, we believe, conditions and explains many of the details to be presented here which apparently differ greatly from those used in other institutions.

At the present time we believe we are operating very successfully a rather large blood and plasma bank. Anyone, who will compare our apparatus and technic with many of those used elsewhere, will immediately realize that some of ours appear to lack a certain perfection in detail when compared to the practice of others. Our system, such as it is, was started without much benefit from the experience of others and has been limited somewhat by conditions local to our community and hospital and perhaps by a relative demand of economy. However, at present we feel under no obligation to alter it in any radical manner.

Our present attitude toward the entire problem may be summarized in some such way as this: The conduct of many plasma banks now operating includes certain procedures that are theoretically better than our own. With the increased use of plasma all over the nation, rapid changes and improvements in equipment and operation are doubtless being made and will continue to be made in the next few years, but one has every reason to expect that within a period of a very few years the fundamental principles of conducting a plasma bank will be rather well standardized. It is likely that there will be general agreement as to which types of apparatus and which technical procedures are desirable and which are a waste of time. Until that stage is reached, we have no intention of investing in expensive equipment that may soon be antiquated.

The successful conduct of a blood and plasma bank may be divided into two convenient stages for purposes of description.

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*From Department of Surgery and Laboratory, King County Hospital, Seattle.

I. COLLECTION OF BLOOD

Source of donors. Most of the donors used come from friends and relatives of patients in the hospital. Occasional appeal is made to service clubs, members of which have been found very willing to donate blood for the use of charity patients who have no relatives or friends to whom to appeal. No paid donors are used.

Collection of blood from donors. When a donor reports to the hospital he is sent to a room set aside entirely for the purpose of drawing blood from donors. This room is the headquarters for this work. Equipment for withdrawing blood is kept always in readiness here, likewise the records of all blood taken from donors and of all transfusions of blood or plasma given in the hospital. Twenty-four hour nursing assistance is available for the room. A nurse is not stationed here at all times, but at least one nurse from each shift in the twenty-four on this floor is available for duty in this room when there is need for it. This particular group of nurses is made thoroughly familiar with the technical details of the entire blood transfusion set-up, and is responsible not only for the technical procedures which go on here but for the correct keeping of records.

When a donor arrives at this room he is interviewed by a member of the resident staff. A brief history is taken according to the plan outlined in figure 1, and if necessary an examination is made. If it has been practicable, he was previously instructed to refrain from eating before coming to the hospital, in order to avoid the possibility of a high serum content of potential allergens from a recent meal. He is now informed of the purposes for which his blood is to be used and is asked to sign a consent slip as indicated in figure 2. Most of the donors come with the idea that their blood is to be used for a particular patient whom they know. If they make a special point of this and inquire into the details closely, these are explained to them. They are assured that their blood will be used for their friend or relative if practicable, and if not, a fair exchange with the blood from some other donor may be necessary.

Donor..Type.......Age.......Sex.......Color.....
Last Name First

Address..Telephone Number..................

Diseases and Date

Syphilis..Tropical Diseases..................

Tuberculosis..................................Infectious Diseases..................

Are You in Good Health?..

Date Withdrawn.......Amount.....cc. Drawn by.....Assisted by.....

Recipient's Name.......Hospital No.......Wassermann Date.......
Donor
☐ Plasma

Fasting Blood?.....Amount Used.....cc. ☐ Blood Date Used.......

Reactions (Date and Nature):..

Fig. 1.

I, the undersigned, willingly give my blood to be used for transfusion at King County Hospital. The use of this blood to patients shall be determined by the Hospital Staff, and I release them from any liabilities or claims.

Donor..

Witness..

Witness..

Fig. 2.

Blood is then drawn in the amount of approximately 500 cc. The exact technic of preparation of the patient and of venepuncture is not given in detail, since they would be familiar to anyone attempting this, but some of the details of apparatus and procedure used in our hospital are explained, since they concern the subsequent steps in the handling of the blood and plasma. Beside the donor, there are two necessary persons in the room, the physician and the nurse. The physician dons mask, sterile gown and sterile gloves. The nurse remains "unsterile" and assists. She exposes for him the sterile materials shown in figure 3. These include: (A) flat towels for draping the arm, (B) gauze sponges, (C) one turkish bath towel for use as a pad under the arm, and the rubber stopper with tubes and needle all assembled, the details and use of which will be explained later.

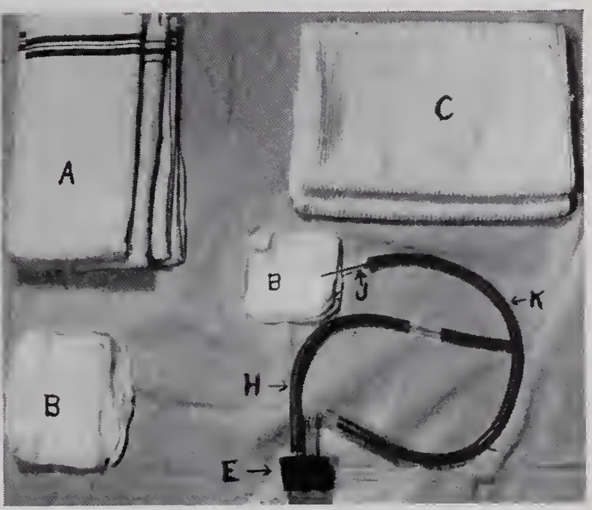

Fig. 3. Sterile materials.

In figure 4 is shown the collecting bottle (D). This consists of a quart milk bottle with "Common Sense Top" (a trade term), without lettering. Lettering or other designs

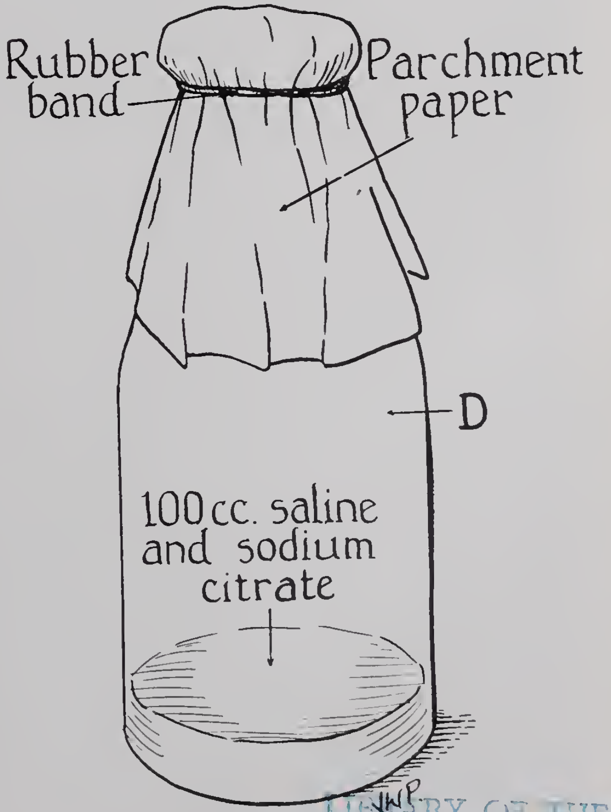

Fig. 4. Collecting bottle.

JWP
LIBRARY OF THE
COLLEGE OF PHYSICIAN
OF PHILADELPHIA

Fig. 1. History card.
Fig. 2. Consent slip.

in the glass weaken its resistance to autoclaving. Also, we have found this type of bottle inexpensive, easy to clean, of convenient size and shape for handling, and suitable for a stock size and relatively inexpensive rubber stopper. Into it have been placed 100 cc. of physiologic salt solution containing 2.5 gm. of sodium citrate. The open top has been covered with parchment paper secured with a rubber band. Assembled thus, it has been autoclaved. Its outside is handled by the nurse who carefully removes the parchment covering, exposing the sterile top and interior.

Into the sterile top, the doctor fits the stopper-tube-needle assembly as indicated in figure 5. The stopper (E) is an amber gum rubber two hole stopper, size 9. Into this have been fitted two glass tubes of 6 mm. diameter, cut from stock available in every laboratory, one (F) about 3 inches long, straight, the other (G) about 5 inches long and bent. All of the rubber tubing in the set and to be mentioned hereafter is of the same type, so-called amber rubber tubing ¼-inch diameter, 1/16-inch thickness.

A piece of rubber tubing (H) about 10 inches long has been connected to (F) and in the other end of (H) is another short piece of glass tubing (I), this serving only the purpose of forming an easily disconnectable joint for reasons to appear later. Another short length of rubber tubing on the end of this is unlettered in the diagram. To glass tube (G) has been connected a rubber tube (K) length of about 12-15 inches, and in the end of this has been fitted a venepuncture needle (J), 18 gauge. Many would prefer to have a glass adaptor of standard type between the needle and tube here, but we believe the small caliber of these adaptors impedes somewhat the free flow of blood that is desirable. If the needle and tube are directly connected, as shown here, it will be found desirable to use a needle with a round hilt in contrast to the more usual type with flattened sides.

The nurse now fits the rubber bulb (S) into the set-up as shown in figure 5. This is a two valve "gas collecting" bulb, the action of which allows the aspiration of air from any attached container. With this rubber bulb (S), the nurse maintains a slight vacuum, if necessary, in the bottle (D). The nurse holds the unsterile outside of the bottle (D) agitating it very gently while the doctor proceeds with the venepuncture and withdrawal of blood, which flows through needle (J) and tube (K).

After the requisite amount of blood has been withdrawn and the needle removed, the needle and its rubber tube (K) are then disconnected from the glass tube (G) by the physician. He then disconnects the end of the rubber tube (H) from glass tube (I) without disconnecting it from (F). He then immediately reconnects the free end of (H) to the free end of glass tube (G) as shown in figure 6. The ends of these rubber and glass tubes mentioned have theoretically remained sterile during the procedure, and at this step the system is theoretically "opened" for this short period but again sealed by this step. Since the stopper is not removed the blood drawn into the donor bottle is theoretically sterile.

Before the needle is withdrawn from the vein and after the tube (K) is disconnected, about 5 cc. of blood is allowed to run from the open end of the tube (K) into an unsterile test tube (L) held by the nurse. This test tube has been labeled with the donor's name and is affixed with adhesive tape to the outside of the bottle as shown in figure 6. The blood in this tube is to be used for serologic test and for typing in the laboratory. To the outside of the bottle is pasted a gummed label, the details of which are indicated in figure 11. The date, donor's name, and doctor's name are filled in by the nurse in the transfusion room, and the flask so assembled is sent to the laboratory, the top covered with a sterile towel.

Figs. 5-10. Illustrate technical steps described in text.

Donor's Name..
Date..
Doctor..

(To Be Filled in by Laboratory)

Type....................Wassermann....................
Suitable for....................(Patient's Name)
Technician..

Fig 11

In the laboratory, the serologic and typing tests are performed, and this portion of the label (fig. 11) is filled out by the laboratory technician. If the blood is satisfactory as whole blood for a particular patient, a note of this is made upon the label by the laboratory technician. The entire flask is then placed in the refrigerator without doing anything further, providing it is not used immediately. Whole blood thus saved as such and placed in the refrigerator is considered suitable for transfusion purposes as whole blood for seven days. The stored blood in the refrigerator is inspected daily by the laboratory technician, and whole blood which has passed the expiration time of seven days as indicated by the label is converted into plasma.

II. PREPARATION AND STORAGE OF PLASMA

The essential steps in the conversion of the whole blood to plasm is illustrated by figures 7, 8 and 9. In figure 7 the same flask as shown in figure 6 has now been removed from the refrigerator. Tube (H) has been disconnected from the glass tube (F) and through this there is inserted a long sterile needle (M), used only for this purpose. This needle is a B-D Yale needle 13 gauge, 10 inches long, specially prepared and not as yet in stock, but any suitable similar aspirating needle of sufficient length, or a small caliber steel tube cut to suitable length, might be substituted. This needle is connected with a rubber hose (N) and a large pooling bottle (O) as shown in figure 8. This entire assembly has been previously sterilized. The supranatant layer of plasma is aspirated through this needle into the large pooling flask (O).

As a matter of practice, we aspirate plasma from about ten different donor bottles in immediate succession without changing the needle. In each case, the needle is carried down to within a few mm. of the layer of blood cells with the least agitation possible so as to secure as few blood cells as possible. In many hospitals, the whole blood at this stage is centrifuged in order to make the packing of blood cells more compact, and the percentage of recovery of plasma from each bottle correspondingly greater. In some institutions donor bottles are of such construction that they can be placed directly into a special centrifuge, but since a special centrifuge for this purpose is very expensive, we make no attempt to do it. Undoubtedly a higher percentage of plasma is secured from each blood specimen in this way, but in our own particular hospital set-up it is thought more practicable for the time being to sacrifice an extra 15 per cent of plasma in each case than to attempt installation of expensive apparatus which we do not now possess.

Consulting figure 8: The flask (O) is an Erlenmyer Pyrex flask of 4000 cc. capacity. The rubber stopper (P) is of the same size and type as that used for the donor bottle and is fitted with two glass tubes (Q) and (R). The tube (R) has a small cotton pack in it to act as an air filter. To it are connected an unsterile tube and aspirating bulb (S) identical in type with that shown in figure 5 (S). Manipulation of this bulb will produce potential vacuum in the flask so that plasma from the donor bottles will flow freely

Fig. 11. Blood donor flask label.

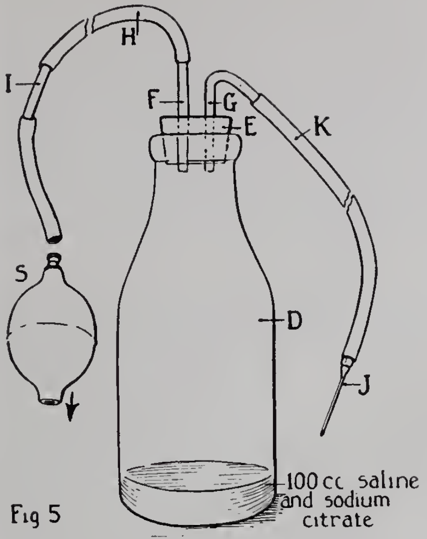

Fig 5

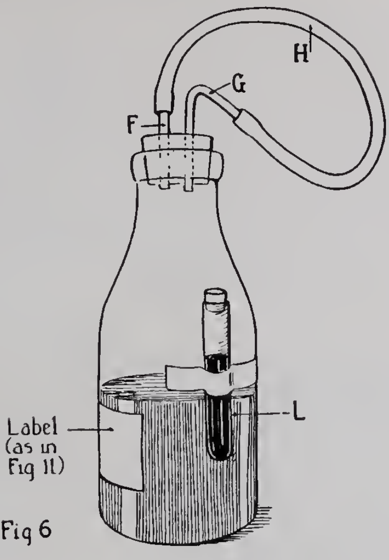

Fig 6

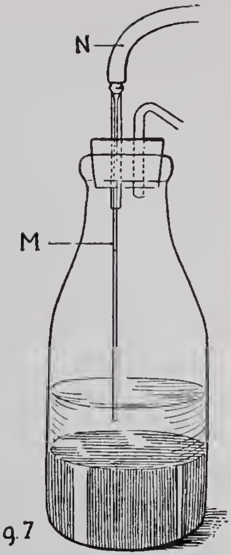

Fig. 7

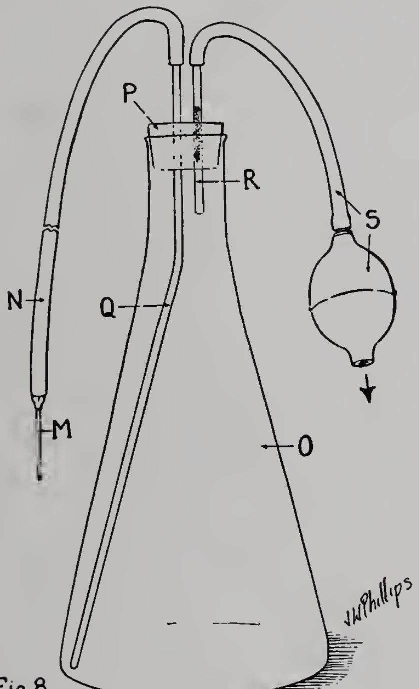

Fig. 8

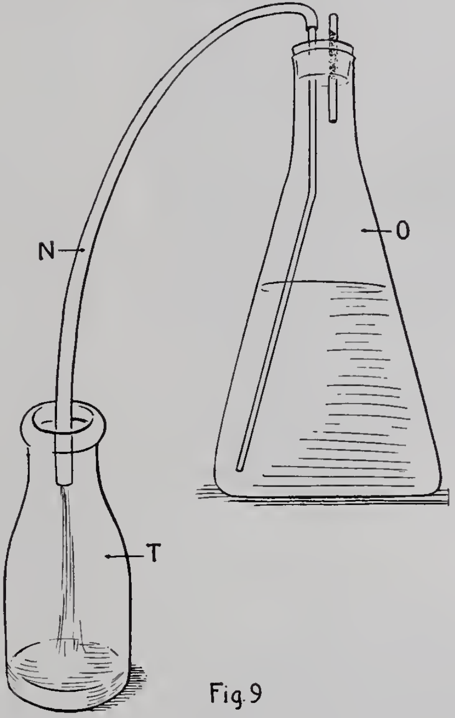

Fig. 9

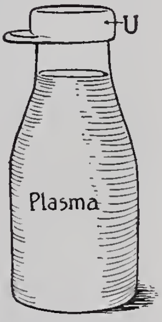

Fig. 10

through (M), (N) and (Q) into the flask. As the plasma from the last batch to be pooled in this flask is aspirated into the bottle, the rubber tube (N) is clamped promptly so as so leave a column of plasma in it to act as the priming fluid for the subsequent syphon removal of the plasma from this pooling flask.

The next step is the redistribution of pooled plasma into small bottles for purposes of centrifuging to remove the last small sediment of blood cells. This redistribution process is shown in figure 9. This next step occurs immediately after the pooling bottle has been filled. The rubber bulb is immediately disconnected and the needle is removed from tube (N). The bottle (T), previously sterilized, is placed at a level far enough below that of the pooling bottle to allow a syphon action flow of plasma back through the tube (N) into each of several identical bottles, one at a time, as shown in figure 9. These bottles are half pint milk or cream bottles.

This entire pooling step is omitted by some, the plasma from each donor being separately transferred to individual flasks for use. Lengthy explanation of reasons for this will not be attempted here, but it is thought that fewer reactions will occur, if the plasma from multiple donors is mixed or pooled and this pooled plasma is divided into the individual bottles for dispensing. We use this particular milk bottle because it holds conveniently 250 cc. of plasma, and because it is of a size which will fit into the No. 2 International centrifuge which we happen to have in our laboratory. This is a common size of centrifuge in hospital laboratories and a special head to carry such a size bottle may be secured for it. This is called a Regular Head, 4-place 250 ml.

A very thin layer of blood cells is commonly present at the bottom of each bottle. After the centrifuging process is complete, the supernatant plasma may be aspirated off or poured off into whatever type of storage flask is desired.

As a matter of fact, we use the same type of milk bottle for this purpose also, half pint size, covering it with a sterilized rubber cap (U) as shown in figure 10. This cap is a Davol, Antigerm Milk Bottle Cap, purchasable in most drug stores. This capped bottle, containing 250 cc. of plasma, is the one which is distributed upon requisition to the various floors or surgery, where it will be uncapped just before use and the plasma poured into the usual intravenous or transfusion set. Each lot of pooled plasma is labeled according to a "lot" number, and this number is recorded upon a label attached to each small distributing bottle. This is done in order to check subsequent cultures which are made and for possible value in keeping statistical data upon reactions.

Plasma is kept for a *minimum* of one week and preferably for three weeks in the refrigerator before it is distributed to the patient. Of course, it may be kept much longer and is safe so long as it is not contaminated. Cultures are taken of it to check the sterility. If a small flask of plasma intended for a patient is found contaminated, then all small flasks of plasma which originally came from that lot may be easily identified and discarded. Furthermore, we believe that such a check may conceivably be of value in the future in case serious reactions are encountered. This might make it easier to trace reactions to the blood of a certain donor or to the error of a given technician, physician, nurse or anyone else. The marking of plasma lots is very little trouble and may conceivably be of great value in tracing errors in technic.

DISCUSSION

The foregoing presentation is offered chiefly for illustration of the technical details in connection with the operation of a plasma bank conducted along relatively simple lines. There is no intention of discussing the indications and actual use of the plasma in this place. A few words of explanation about some of these technical details can scarcely be omitted insofar as such details may concern apparently important differences between our method of technical procedure and those used by others.

The first difference between this and many other systems is that this is not entirely a "closed system," so that here and there in the process there is offered a theoretical opportunity for contamination of the blood or plasma. We do not believe as yet that this is a serious objection. We do not present statistics upon our bacteriologic work, because the system has been changed so rapidly that we have not had time to accumulate enough comparable data to be convincing. However, we feel we are entitled to make a few general remarks.

Only occasionally have we discovered bacterial contamination by the use of cultures and somewhat more frequently we have detected bacteria in smears from the centrifuged sediment of the plasma. We do not believe as yet that they are of great significance because only rarely have even minor reactions in the patients been encountered which might conceivably be attributed to the plasma, and in no case has there been any serious reaction. When and if we meet with such reactions, we will be convinced of the wisdom of changing this part of the system.

It is our present belief that the most important factor in guarding against bacterial pyogenic reactions in the patient is the practice of keeping all blood and plasma at refrigerator temperature whenever possible. A routine is established whereby the blood is always sent promptly to the laboratory when withdrawn from the patient, and whereby in the laboratory the blood and plasma flasks are never removed from the refrigerator except for the necessary minutes in the transferring processes. Likewise, no effort is made to warm the plasma preparatory to giving it to the patient. We believe this is bad practice in that the few calories difference that it might conceivably make in the patient's metabolism or expenditure of energy in warming it in his blood stream is relatively insignificant compared to the risks of slightly overheating it beyond body temperature.

In some hospitals there is a practice of freezing the plasma preparatory to and during storage, thawing it out just before administration to the patient. This has two advantages: (a) bacterial growth is completely inhibited during the frozen state, offering additional guarantee against this hazard; (b) complement and prothrombin are preserved very efficiently in a frozen plasma, whereas it will quickly deteriorate in plasma kept only at ordinary refrigerator temperatures. These advantages do not seem great to us, and only time will tell whether this additional step will be worth the effort in ordinary practice. We have not tried it, chiefly because as yet we cannot afford the expensive apparatus required.

In general, the chief difficulties in connection with the establishment of a plasma bank in a hospital and community, where one has not previously operated, will not be those of apparatus and technical details. These can be readily mastered by anyone possessing usual laboratory facilities and other hospital apparatus.

Undoubtedly, the first difficulty in the beginning is with the establishment of a system of getting donors to supply the blood when money is not available to pay for it. There is little doubt that with the increased use of plasma and with what might be almost termed the lavish use that may be necessary for the occasional patient, any effort to pay for all of it at the current rates for professional blood donors is out of the question. Free donations of blood will be necessary. Furthermore, it is doubtful whether so-called community blood banks embracing several hospitals can be made practicable except in a very few exceptional communities. There is little reason why any hospital of ordinary size should not establish its own individual blood bank.

It is obvious that it will require stringent rules and regulations governing the withdrawal of blood or plasma from the bank. It requires close and constant cooperation from each member of the hospital staff, and while the friends or relatives of the patients should supply the blood, it will be the individual physician's responsibility in the long run to see that they do so. For us this has been no great problem, probably in part because our patients are charity patients, and poor people have many willing friends, but also because the professional responsibilities for getting the donors into our hospital rest entirely with the intern and resident staff; and in this hospital this happens to be a rather large, very cooperative and aggressive group of men. We hesitate, therefore, to make suggestions for this part of the process, because the actual rules and regulations by which this work is conducted will doubtless be varied from one hospital to another. It is, of course, a most necessary phase of the work; if there is not a continual flow of donors into the hospital and a sympathetic and intelligent handling of them to maintain it thus, then the whole process will break down, regardless of the type of bottles or needles used.

In short, we believe that the technical aspects of conducting a plasma bank may be quickly instituted by any hospital having adequate laboratory and nursing facilities. The rest is up to the physicians of the staff.

AMERICAN CONGRESS OF PHYSICAL THERAPY

The 20th annual scientific and clinical session of the American Congress of Physical Therapy will be held September 1 to 5 inclusive, 1941, at The Mayflower, Washington, D. C. The mornings will be devoted to the annual instruction course, and the afternoons and evenings will be devoted to the scientific and clinical sessions. All phases of physical medicine will be covered in the general program, including a special symposium on poliomyelitis. The program will be of interest to the general practitioner as well as to the specialist in physical therapy. For information concerning the seminar and preliminary program, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

TOTAL GASTRECTOMY FOR DIFFUSE SUPERFICIAL CARCINOMA*

Joel W. Baker, M.D.
SEATTLE, WASH.

The patient presented underwent total gastrectomy for a rather rare type of carcinoma, that is, a total involvement by diffuse superficial carcinoma, (figs. 1 and 2). This is an anaplastic carcinoma which, beginning usually at the pylorus, spreads throughout the mucous membrane layer, creating great thickening of this layer yet not invading the muscular coat or serosal layer (fig. 3). As is the

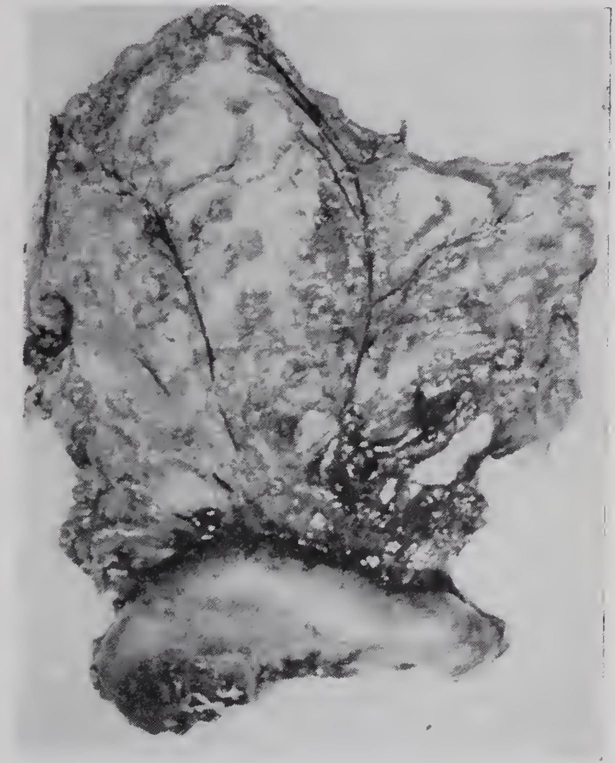

Fig. 1. Photograph of the removed stomach with greater omentum attached. Exterior view.

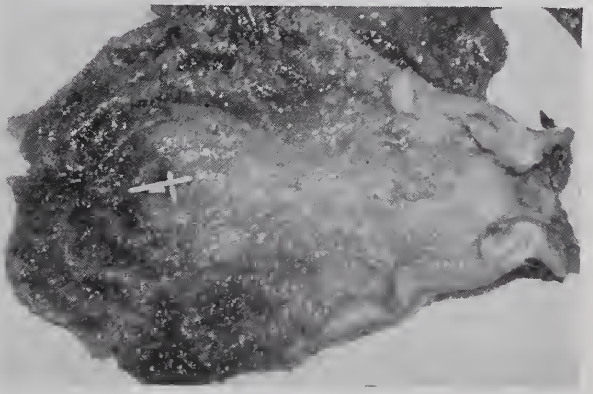

Fig. 2. The stomach opened.

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*Read before a meeting of King County Medical Society, Seattle, Wash., March 3, 1941.

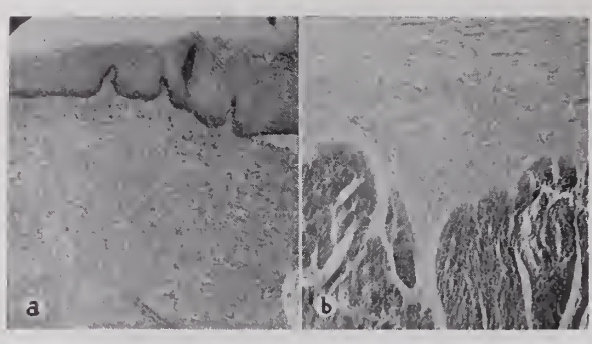

Fig. 3. Photomicrographs of diffuse superficial carcinoma of the stomach. (a) Showing extension upward beneath the esophageal mucosa. (b) Showing its failure to invade the muscular layer.

rule, it caused no ulceration. This type of diffuse carcinoma is to be differentiated, however, from linitis plastica (i.e., a sclerosing, diffusing fibrocarcinoma) which infiltrates all layers of the gastric wall. The two types are similar in that they seldom cause ulceration; hence, bleeding and secondary anemia are not usually a part of the clinical picture. Both require total gastrectomy with anastomosis of the esophagus to the jejunum: a difficult technical procedure. Approximately eighty-six instances of total gastrectomy have been reported in the literature.

CASE REPORT

Mr. E. H. (Cl. 78694), a laundryman, aged 60 years, was referred December 20, 1940, for carcinoma of the stomach. The patient had considered his health good and his digestion perfect until last June. At that time he first noticed, after eating strawberries, a gnawing, burning pain in the stomach. This had persisted since, coming immediately after meals and lasting a half hour or longer. There had been no vomiting although he had lost sixteen pounds in weight. First roentgenologic study in October apparently failed to reveal the lesion. He consulted a roentgenologist in December. At that time he again had a roentgenogram and was found to have a filling defect in the distal half of the stomach. He was referred to me for surgical consideration (fig. 4 a, b).

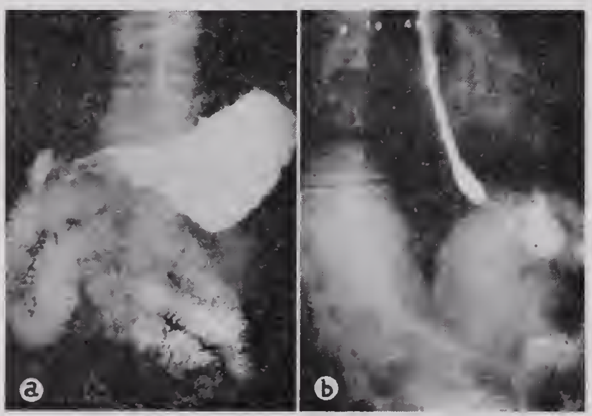

Fig. 4. Roentgenogram. (a) Showing filling defect, distal half of stomach. (b) Three weeks postoperatively. Showing esophagojejunal anastomosis.

Physical examination added nothing of significance. The mass could not be felt. Chest roentgenogram was negative and no gross metastases could be demonstrated by palpation of the root of neck, the umbilicus, the liver border, or the rectal shelf. Pyorrhea of the gums and a tendency to hypotension (blood pressure 110/80) were noted. On laboratory examination, the hemoglobin was found to be 118 per cent (16.2 grams), the red blood count 5,900,000, the blood chlorides 462 mg. per cent, the vitamin C 0.7 mg. per cent, the serum proteins 5.17 mg. per cent (below the critical level of 5.3 mg. per cent), and the urine was negative with a specific gravity varying from 1.010 to 1.023.

Five days were taken in preparation for surgery. The stomach was aspirated and lavaged with 0.1 normal hydrochloric acid solution night and morning. Vitamins C and B were given parenterally, and blood donors were secured.

At operation the distal half of the stomach was grossly involved but the diffuse infiltration of the entire lesser curvature was not appreciated until resection was in progress. There were no demonstrable gross metastases in the liver or peritoneum, although numerous glands along the lesser curvature were palpably enlarged and were resected. A radical total gastrectomy, including all of the greater omentum, a portion of the duodenum, and a portion of the esophagus, was accomplished, followed by an anterior anastomosis of the esophagus to the jejunum. A Levine nasal tube was passed beyond the anastomosis into the distal loop of the jejunum. This operation was carried out under nitrous oxide ether inhalation anesthesia. A prearranged blood transfusion was given during the latter part of the operation and the patient left the table in good condition without evidence of surgical shock.

Although the patient's condition appeared to be satisfactory for several days, he was destined to run a gauntlet of complications. Anticipating an aspiration atelectasis, we took a chest roentgenogram a few hours postoperatively. Surprisingly enough, this showed a pneumothorax over the upper right lobe. The roentgenogram was repeated three hours later. It then showed the lobe to be expanded. The patient's course remained satisfactory until the fourth postoperative day, when he developed an atelectasis of the right middle and upper lobes.

Doctor John F. Tolan promptly accomplished a bronchoscopic aspiration of the right main stem bronchus, upper and middle lobe orifices. This aspirated sputum was sent to the laboratory but failed to type for pneumococci. Sulfanilamide which had been given since the day of operation in an effort to prevent mediastinitis (one of the hazards of anastomosing the esophagus) was now changed to sulfathiazole. By the ninth postoperative day the temperature remained normal. On the twelfth postoperative day, a left sided parotitis was in evidence, the gland becoming quite enlarged and firm with an associated rise in temperature. This was relieved by immediate application of radium and roentgen therapy, requiring three days to reduce the fever and a week to reduce the swelling. This proved to be the last complication and the course thereafter was uneventful.

The patient was up in a chair by the eighteenth day and left the hospital on the thirty-seventh postoperative day, still feeble but able to walk unassisted. During the first fifteen days formula feedings (peptonized protein, carbohydrate, salt, and vitamin) were given every one to two hours via the indwelling Levine orojejunal tube. This tube was removed on the fifteenth day and thereafter oral feedings were taken every two hours. No difficulty was experienced in swallowing and the anastomosis seemed adequate although substernal fullness was noted if swallowing was hurried.**

**Patient seen again June 12, at which time he had gained sixteen pounds in weight. He was esophagoscoped at this time and no evidence of recurrence was seen in the anastomosis. The instrument passed freely into the jejunum without stricture.

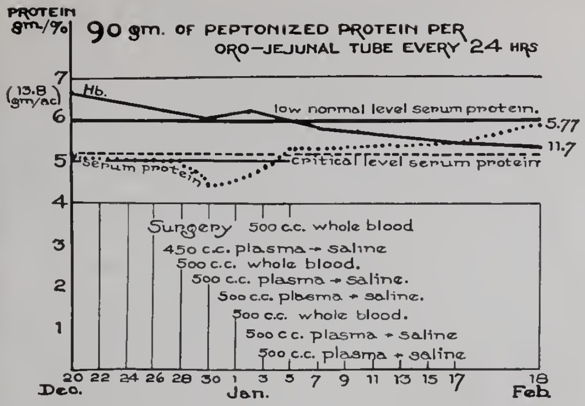

Fig. 5. Chart of serum protein levels, hemoglobin levels, and plasma administrations.

During the complications of the first two weeks, three whole blood and six plasma transfusions were given (from the hospital bank) because of the persistently low serum protein values. It is to be noted from the chart (fig. 5) that the serum protein was below the critical level before, and for three weeks after, the operation. Edema of the feet appeared in the third week and spontaneously reduced as the serum protein level increased.

DISCUSSION

Prognosis for carcinoma of the stomach remains deplorable. It will improve only when physicians heed the vague early gastric symptoms in the patient past forty years of age and order gastrointestinal studies by competent roentgenologists. At the present time, fifty out of every hundred patients diagnosed as having carcinoma of the stomach are clinically inoperable at the time of diagnosis. Of the other fifty, twenty-five prove to have inoperable metastases at the time of operation and of the remaining twenty-five, who are resected, only twenty per cent survive five years.

From a technical standpoint, total gastrectomy is always hazardous, and some excellent surgeons are of the opinion that the risk is seldom, if ever, justified. When one reviews the gauntlet this particular patient ran, he is inclined to agree with this viewpoint. Of two previous total gastrectomies (each for sclerosing diffuse fibrocarcinoma or linitis plastica), I lost one with mediastinitis; the other lived six months and died of recurrence. In the present instance, had I realized at first the extensive involvement of the lesser curvature, I doubt if I would have undertaken a resection. When one considers the anaplastic nature of this growth the prognosis is still more gloomy.

A review of this case, therefore, reflects credit principally upon the fortitude of the patient and the prompt and helpful consulting aftercare for which I would take this opportunity to thank the internist, the bronchoscopist, and the roentgenologist. It does illustrate the advantages of an available plasma bank for which our hospital is indebted to Doctors Potter and Stone. It also illustrates the advantage of orojejunal feeding, the advantage of the sulfanilamide group as an adjunct to surgery and the very great advantage of bronchoscopic aspiration in postoperative atelectasis. In this last connection it should be mentioned that intratrachial anesthesia and thorough aspiration of the stomach by gastric tube during the operation reduce this hazard in gastric surgery.

A few points of technic followed in this case should be mentioned. First, I followed Ogilvie's[1] procedure, i.e., I resected the entire greater omentum from the transverse colon, removing it en bloc with the stomach (fig. 6) and carried the dissection down the superior sheath of the transverse meso-

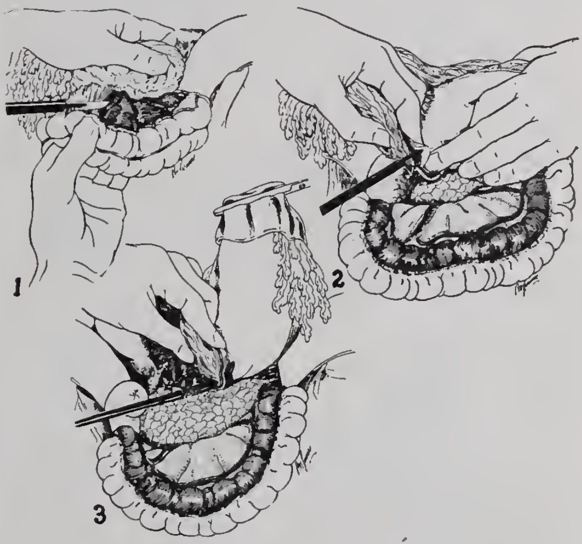

Fig. 6. The peritoneal compartments in relation to cancer spread. 1. Celomic transplantation of gastric cancer. 2. Amount of cancer bed removed in standard gastrectomy. 3. Amount removed in radical gastrectomy. Reprinted by courtesy of Surgery, Gynecology and Obstetrics from article by Ogilvie.

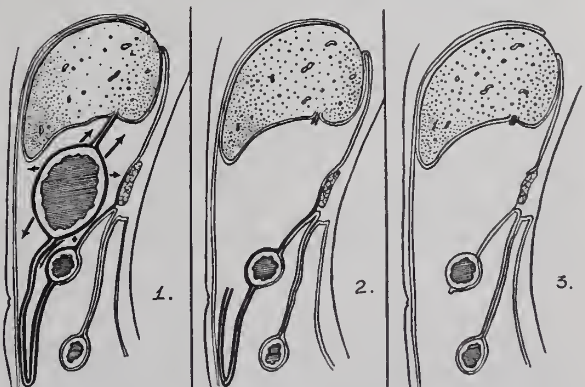

Fig. 7. Steps in Ogilvie radical resection for gastric carcinoma. 1. Opening the fusion plane between omentum and transverse colon preparatory to removal of the great omentum en masse with the stomach. 2. Ligature of the right gastroepiploic artery at its origin. 3. Exposure of the left gastric artery and its origin from the celiac axis trunk. Reprinted by courtesy of Surgery, Gynecology and Obstetrics from article by Ogilvie.

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[1] Ogilvie, W. H.: Cancer of Stomach. Surg., Gynec. & Obst. 68:295-305, Feb. (No. 2 A), 1939.

colon and lesser omentum. Believing that the early spread of gastric carcinoma is by the lymphatics and by implantation of shed cells upon the peritoneum, Ogilvie feels that this radical procedure will remove seventy-five per cent of this potential cancer bed. Since this dissection carries *around* the blood vessels and their associated lymphatics rather than cutting through them, the radical principles of the Halstead operation for carcinoma of the breast are fulfilled. The two main vessels, the right gastroepiploic and the left gastric, are divided at their origin; all the others are resected in toto with the stomach (fig. 7).

Second, in anastomosing the esophagus to the jejunum, I have derived comfort from the technic advocated recently by Roscoe Graham[2] (fig. 8). In addition to its advantages of technical ease, the method better serves to quarantine the posterior mediastinum before, and as, the anastomosis is made. It should reduce the incidence of mediastinitis. Third, the method should give a better functioning anastomosis.

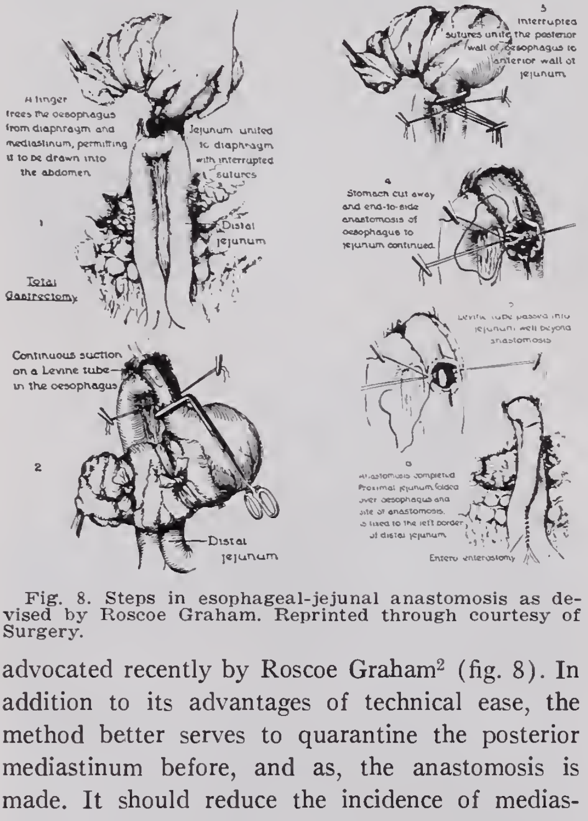
1
A finger frees the oesophagus from diaphragm and mediastinum, permitting it to be drawn into the abdomen
Jejunum united to diaphragm with interrupted sutures
Distal jejunum
Total Gastrectomy
3
Interrupted sutures unite the posterior wall of oesophagus to anterior wall of jejunum
4
Stomach cut away and end-to-side anastomosis of oesophagus to jejunum continued
Continuous suction on a Levine tube in the oesophagus
2
Distal jejunum
5
Levine tube passed into jejunum well beyond anastomosis
6
Anastomosis completed Proximal jejunum folded over oesophagus and site of anastomosis, is fixed to the left border of distal jejunum
Entero enterostomy

Fig. 8. Steps in esophageal-jejunal anastomosis as devised by Roscoe Graham. Reprinted through courtesy of Surgery.

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[2] Graham, R. R.: Technique for Total Gastrectomy. Surgery 8: 257-264, August, 1940.

PSYCHIATRIC INSTITUTE

Here is a new form of postgraduate instruction for the Northwest. It is a two weeks session in psychiatry open to the general profession. For further information, see page 289.

CURARE AND SCOPOLAMINE IN CONVULSIVE THERAPY*

R. J. Bennett, M.D.

FORT STEILACOOM, WASH.

Convulsive therapy was first introduced in treatment of schizophrenia.[1] Because of its beneficial effects it has been adopted widely. More recently the indications for its application have come to include many other abnormal reactions.[2,3] The increase in the use of this type of treatment has brought out a number of undesirable complications. Some of these are the occurrence of various types of fractures, dislocations and sprains. Early reports of such accidents in the medical literature were mostly concerned with fractures and dislocations of the upper and lower extremities and of the mandible. More recently, however, it has become recognized that compression fractures of vertebrae, particularly in the midthoracic region, are one of the most, if not the most, frequent type of fracture occurring in connection with convulsive therapy.

Development of various technics in carrying out the treatment has been responsible for a drop in the occurrence of "mechanical" complications. However, judging from the reports in current medical literature, the problem of vertebral injuries is still considered to be of major importance. Writers give percentage of occurrence as high as 47 per cent.[4] Furst[5] reports a drop in occurrence of vertebral fractures from 50 to 8 per cent by maintaining spinal hyperextension during the convulsion. Rechtman[6] is of the opinion that "no practical type of mechanical fixation can prevent injury to the vertebral bodies." Use of spinal anesthesia has been suggested.[7] More recently experiments with curare[8] and beta-erythroidin hydrochloride[9] have been carried out.

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*From Western State Hospital, Fort Steilacoom.

[1] Meduna, L.: Versuche über die Biologische Beeingflussung des Ablaufes der Schizophrenie, Campher und Cordiazolkrämpfe. Ztscher. f. d. ges Neurol. u. Psychiat., 152:235-262, 1935; New Methods of Medical Treatment of Schizophrenia, Abstr. Arch. Neurol. & Psychiat., 35:361-363, Feb., 1936.

[2] Bennett, A. E.: Convulsive (Pentamethylenetelrazol) Shock Therapy in Depressive Psychoses; Preliminary Report of Results Obtained in Ten Cases. Bull. Menninger Clinic, 2:97, July, 1938.

[3] Bennett, A. E.: Metrazol Convulsive Shock Therapy in Affective Psychosis; Follow-up Report of Results Obtained in Sixty-one Depressive and Nine Maniac Cases. Am. J. M. Sc., 198:695-701, Nov., 1939.

[4] Bennett, B. T. and Fitzpatrick, C. P.: Fractures of Spine Complicating Metrazol Therapy. J.A.M.A., 112: 2240-2244, June 3, 1939.

[5] Furst, W.: Force Required to Crush Vertebrae; Its Probable Mechanical Relation to Postmetrazol Fracture. Psychiat. Quart., 14:397-402, April, 1940.

[6] Rechtman, A. M.: Mechanism of Fractures of Vertebral Bodies. Am. J. Psychiat., 96:1429-1439, May, 1940.

[7] Hamsa, W. K. and Bennett, A. E.: Traumatic Complications of Convulsive Shock Therapy; Method of Preventing Fractures of Spine and Lower Extremities. J.A.M.A., 112:2244-2246, June 3, 1939.

[8] Bennett, A. E.: Preventing Traumatic Complications in Convulsive Shock Therapy by Curare. J.A.M.A., 114: 322-324, Jan. 27, 1940.

A supply of standardized curare (intocostrin) for experimental purposes was recently obtained from E. R. Squibb and Sons. It has been used in 295 metrazol convulsions. In administering the preparation we have followed the technic devised by A. E. Bennett.[8, 10]

The first treatment should be started with a dosage of 10 mg. of intocostrin (standardized curare) per twenty pounds of body weight, and the preparation given as a uniformly sustained injection over a period varying from a minute to a minute and a half, preferably the latter, as some patients seem more sensitive to the drug than others. Using the first reaction as a guide, one may either increase or decrease the dosage or speed of injection to obtain a satisfactory state of curarization. So far I have found that in most cases, and after the initial treatment, an increase in dosage to 12.5 mg. per twenty pounds of body weight and a period of injection of forty-five to sixty seconds gives the desired effect. Patients receiving the treatment have all been healthy, muscular males. This may be the reason for the necessity to increase both dosage and speed of administration.

The effects of physiologic curarization may be seen while the intocostrin is being given or within one or two minutes, depending upon the rapidity with which it is administered, and the sensitivity of the individual to the drug. He will usually first complain of eye symptoms, blurring of vision; next bilateral ptosis appears. It becomes more pronounced as the curarization progresses and the patient may state that he feels sleepy. At about the same time nystagmoid movements are seen, there is a slight dysarthria and he may complain of his lower jaw feeling "tight." He may not be able to close it. The features become somewhat erased, swallowing may occur and there is increased difficulty in raising the head; finally it cannot be raised. This is followed by paresis of spinal muscles. If the effect is allowed to continue, complete paresis of legs and arms takes place. Shallowness of respiration, due to paralysis of intercostal muscles and later of the diaphragm, appears last in the sequence of events. Some complain of respiratory difficulty before much paresis has developed.

The peak effect of curarization is revealed when the patient is barely able to lift the head or legs. This condition may be attained in from two to five minutes. Metrazol is given at this stage. The needle used for the intocostrin is left in place and the empty syringe exchanged for one containing the convulsant. I have found it best to connect the latter before a state of physiologic curarization has been reached, so that metrazol can be injected at once, should the subject become frightened, due to mild respiratory embarrassment, and start struggling.

The severity of the seizure will vary with the stage of paresis attained. If the peak effect of curarization has been reached, the intensity of the muscular action is greatly diminished. The sudden, acute anterior flexion of the spine which usually occurs at the onset of the convulsion may be totally absent; the magnitude of the remaining phases is considerably ameliorated. Duration of the seizure is not affected.

Metrazol dosage has been routinely increased one-half cc. at each consecutive treatment to insure a grand mal type seizure. A few cases have required more. I am not certain that intocostrin was the cause for the necessary increase in dosage in the last group. In two persons it was found necessary to raise the dosage by one to one and one-half cc. per treatment. Even with this increase some injections had to be repeated. Giving metrazol without intocostrin made no difference. To avoid extremely high metrazol intake in the last treatments, due to large dosage and repetition of injections, the patient was first "sensitized" with a three or four cc. metrazol injection, followed by the adjudged convulsive dose within a few seconds, usually as soon as the patient showed evidence of "feeling" the smaller dose (twitching of facial muscles, blinking of eyes, hyperventilating, etc.). This method worked successfully.

Precautions, such as hyperextension of the spine by placing a pillow between the scapulae, use of a tongue gag and fixation of the head of the humerus in the glenoid cavity by holding the shoulders firmly, are still used in case metrazol has to be given before a state of curarization is reached. Usually these precautions are not needed. However, care must be taken to keep the patient's head from falling backward, as he has no control over his neck muscles.

In the postconvulsive state, the usual hyperventilation is ameliorated in amplitude. Respiration may be gasping, jerky and shallow. There may be stertorous breathing and later swallowing movements. Aspiration of saliva accumulated in the oral cavity and pharynx should be avoided. Turning the individual on his side and holding the relaxed jaws and tongue forward relieves the condition. Postconvulsive restlessness is greatly diminished. The patient makes attempts to move about, but is held fast to bed because of the muscular paresis.

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[9] Rosen, S. R., Cameron, D. E. and Ziegler, J. B.: Prevention of Metrazol Fractures by Beta-Erythroidin Hydrochloride. Psych. Quart., 14:477-480, July, 1940.

[10] Bennett, A. E.: Excerpts (with additions) from A. E. Bennett's Paper, "Curare. Preventive of Traumatic Complications in Convulsive Shock Therapy," read before American Psychiatric Association, May, 1940.

The effect of intocostrin recedes gradually in ten to twenty minutes. By that time the state of restlessness is usually over. Should respiratory failure occur, artificial respiration is given along with one or two cc. of 1:2000 prostigmine methylsulplate intramuscularly, or epinephrine intravenously. This will restore the person, as both drugs are antidotes. Metrazol itself is partially antidotal.

In a series of 295 treatments, only one case suffered severe respiratory depression. It was the patient's first treatment, and apparently he was more sensitive to the drug than others. The effects came on early and were marked. Following the seizure he failed to breathe. Artificial respiration was started, one cc. of epinephrine slowly given intravenously and one cc. of prostigmine intramuscularly. Respiration was restored within two minutes. The dosage and speed of injection were reduced at the next treatment.

There have been no fractures, dislocations, sprains, complaints of backaches, etc. One case, whose metrazol treatment had to be stopped after the second injection because of a recurrent sacroiliac sprain, was able to receive a full course when intocostrin was used. He made no more complaints of backache. There is no definite effect on the blood pressure. No skin eruptions or other allergic reactions have been observed. I have noticed no increase in tolerance or in sensitivity for intocostrin. The therapeutic effect of metrazol does not seem to be affected.

Articles have appeared in the medical literature regarding the reactivation of old tuberculosis infections, following a course of convulsive therapy. Some of the cases have developed miliary tuberculosis and died within a relatively short time. It is doubtful that any one single factor is responsible for the development of such a condition. However, if the force of the convulsion with its powerful muscular reaction, rise in blood pressure, etc., and postconvulsive forceful hyperventilation are in any way responsible, then we have with intocostrin a means to reduce the chances of this unfortunate and too often fatal complication.

That curare diminishes the fear reaction sometimes seen in connection with convulsive therapy is as yet undetermined, but the fear element has been lacking in this series of treatments.

Articles have also appeared periodically in medical literature regarding the fear reaction in metrazol treatment.[11, 12, 13] A theory on the action of metrazol is that the death threat stimulates the patient to protect himself and causes all symptoms to disappear. Starks and others[14, 15, 16] have indicated that fear of the metrazol treatment is quite common.

It is usually before the convulsion, preparoxysmal phase, and, therefore, soon after the metrazol injection that fear of annihilation becomes manifest. It is sometimes seen in petit mal reactions. This phase is quite short in the grand mal type of seizure.

The patient may show fear preceding the second injection and this may become more pronounced with each succeeding treatment. That fear alone has some therapeutic value in the treatment of mental disorders is denied by some writers. It is the opinion of others that development of fear may nullify early signs of improvement[17, 18] and sometimes cause the patient to become "negativistic, irritable and unmanageable."

The study of Low et al.[17, 18, 19] would lead one to think that fear reactions are to be avoided, in that the percentage of recoveries in a group of patients who are "indifferent" or have spontaneously asked for treatment was two or three times as high as that in groups designated as "always fearful" and "unusually fearful." Recently the trend has been to eliminate the fear element from convulsive therapy. One method has been to administer metrazol while the person was in early hypoglycemic shock. Others have tried scopolamine. Sands[20] finds that with use of this drug a major fit is not experienced by in-

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11. Blaurock, M. F., Low, A. A. and Sachs, M.: Influence of Fear, Pharmacologic Action and Convulsion in Metrazol Therapy. Arch. Neurol. & Psychiat., 42:233-236, Aug., 1939.

12. Meduna, L. and Friedman, E.: Convulsive-Irritative Therapy of Psychoses; Survey of More than 3000 Cases. J.A.M.A., 112:501-509, Feb. 11, 1939.

13. Cohen, L. H.: Therapeutic Significance of Fear in Metrazol Treatment of Schizophrenia. Am. J. Psychiat., 95:1349-1357, May, 1939.

14. Starks, H. A.: Subjective Experiences in Patients Incident to Insulin and Metrazol Therapy. Psychiat. Quart., 12:699-715, Oct., 1938.

15. Postle, B.: Shock Therapy of Schizophrenia. Ohio State M. J., 34:410-413, Apr., 1938.

16. Gillespie, J. E. O. N.: Cardiazol Convulsions. Lancet, 1:391-392, Feb. 18, 1939.

17. Gratjaln, M.: Psychiatric Observations of Schizophrenic Patients during Metrazol Treatment. Bull. Menninger Clinic, 2:142, Sept., 1938.

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19. Low, A. A., Sonenthal, I. R., Blaurock, M. F., Kaplan, M. and Sherman, I.: Metrazol Shock Treatment of the "Functional" Psychoses. Arch. Neurol. & Psychiat., 39:717-736, Apr., 1938.

20. Sands, D. E.: Insulin Premedication in Convulsion Therapy. Lancet, 2:250-251, July 29, 1939.

jection of the usual metrazol dosage. Others[21] consider it satisfactory.

Several cases have received scopolamine (without curare) one hour prior to metrazol injection. The individual was usually asleep or very drowsy when it came time for treatment. He always awakened and looked about him in a drowsy and bewildered manner. Most patients have shown less anxiety and have been more relaxed.

A dosage of scopolamine, gr. 1/75, has been found to give the best result. Of two patients whose treatment had been stopped during a previous course because of fear reactions, one took a full course with moderate objection. The other showed intense fear. He was given a dosage of gr. 1/50. This did not reduce his fear reaction. Treatment had to be stopped.

The metrazol convulsion is of the usual type and severity. The customary convulsive dose of metrazol has not had to be increased. The postconvulsive period is quieter. The patient does not thrash about violently, thus lessening the danger of injuries being incurred by falling out of bed. A calm sleep sometimes follows the seizure. The effects of scopolamine recede over a period of one to one and a half hours. A partial or total amnesia for the whole experience is often shown.

Several patients have been given both scopolamine and curare with no untoward effects. This procedure is used with individuals who show postconvulsive hyperactivity. Up to now most of these have been manics. The combined effects of curare and scopolamine have been responsible for an almost complete absence of postconvulsive hyperactivity or restlessness in these cases.

SUMMARY

1. Intocostrin (standardized curare) has been used in 295 convulsions (36 cases).

2. Except for one case of respiratory embarrassment, no untoward effects were observed. No increase of tolerance or of sensitivity for intocostrin was noted.

3. The intensity of the convulsion as well as magnitude of postconvulsive hyperventilation and restlessness were markedly reduced. Duration of the seizures was not affected. The dosage of metrazol was routinely raised ½ cc. to insure a grand mal type convulsion. Requirement of greater increase in dosage is not thought to be due to intocostrin. The therapeutic effect of metrazol is not affected.

4. There were no fractures, sprains, backaches or fear reactions. A patient convalescing from recurring sacroiliac sprain was given a full course of metrazol treatment without complaining of his back.

5. Scopolamine was used in dosage ranging from gr. 1/100 to gr. 1/50 as a preconvulsion medication to alleviate fear reactions.

6. Of two patients who had fear reactions during a previous course of convulsive therapy, one objected moderately to the treatment, the other showed such fear that treatment was stopped. In patients who had no previous fear reactions, scopolamine had a quieting effect. Postconvulsive restlessness was greatly diminished. A combination of curare and scopolamine almost completely eliminated postconvulsive excitement.

7. Scopolamine did not affect metrazol dosage, severity, duration or pattern of the seizure, or the therapeutic effect of the treatment.

CONCLUSIONS

1. Intocostrin (standardized curare) is a valuable adjunct to convulsive therapy in that it removes the danger of fractures, particularly the vertebral type, sprains, backaches and other unpleasant complications which have occurred in this type of treatment.

2. It makes it possible to apply the therapy to mental cases who would be deprived of it because of some skeletal defect.

3. Scopolamine is effective in reducing apprehension and postconvulsive restlessness in patients receiving convulsive therapy, particularly in those who have had no previous fear reactions.

4. The combined effect of scopolamine and curare has been found almost completely to eliminate postconvulsive excitement.

REPORT CASE IN WHICH SYMPATHECTOMY DID NOT CAUSE MALE STERILITY

The commonly held view that sympathectomy (removal of a part of the sympathetic nervous system) produces sterility in the male, according to Geza de Takats, M.D., and Loring S. Helfrich, M.D., Chicago, in *The Journal of the American Medical Association* for July 5, is contraindicated by a case in which they report that spermatozoa were found after nerve operations.

Several sympathectomies were performed in their case because of circulatory disturbances, pain and ulceration of the toes, blueness and coldness of the toes and fingers, dizzy spells and nervousness.

While a single case, they point out, is insufficient to settle the question of male sterility after sympathectomy, it shows that sterility does not have to occur as a result of this operation.

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[21] Edlin, J. V. and Klein, E. S.: Improvement in Convulsive Therapy with Metrazol by Premedication with Scopolamine Hydrobromide. Am. J. Psychiat., 97:358-365, Sept. 1940.

MENINGOCOCCIC SEPTICEMIA

PROLONGED CASE TREATED WITH THREE SULFONAMIDE DRUGS*

Marian G. Hayes, M.D.
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The meningococcus was discovered in 1877 by Weichselbaum and demonstrated in the blood stream by Gyn in 1899. Although Soloman described a case of prolonged meningococcemia in 1902, extrameningeal meningococcic infection was given little notice in this country until Herrick[1] described a series of cases in 1919. He pointed out that most cases of meningococcic infection in civil life were seen late, after the infection had fixed itself in the meninges. This had led to signs of meningeal involvement being the chief criteria for diagnosis. Herrick observed 315 cases of meningococcus infection from incipiency and diagnosis was made in 40 per cent of the cases before meningitis developed; he emphasized the fact that the meningococcic infection was a septicemia during the stage of invasion and this septicemia was usually present for forty-eight hours or so and was followed by localization of the infection in the meninges or some other part of the body.

REPORT OF CASE

A girl aged twenty-two entered the University Hospital at 4:00 p.m., October 24, 1939, with the following complaints: (1) fatigue, (2) a chill, (3) fever, (4) nausea and vomiting, (5) soreness over the entire body and joint pains. She had felt tired for several days but was not aware of being ill until she had a chill around midnight on the day of admission, followed by fever, nausea and vomiting, and extreme soreness over the entire body.

Observation at the time of admission revealed a prostrated patient from whom it was difficult to get any response to questioning. Her general appearance was poor because of absence of subcutaneous fat on the upper extremities, face and trunk down to the thighs. Aside from fever of 101.8°, pulse of 100 and marked generalized hyperesthesia of the skin, physical examination was negative.

At 8:00 p.m. the fever had risen to 105°, pulse to 130, and twitching of many of the muscles was noted; the w.b.c. was 30,200, pmn. 59, staff 36, L 4 and M 1. At 10:00 p.m. a closely set hemorrhagic rash developed; this consisted of petechiae on the arms and trunk and 10-15 mm. purpuric spots on the buttocks and lower extremities. She was lying on her side with arms and legs flexed; there was definite rigidity of the neck and spine and a positive kernig. Muscular twitching was more marked than at the time of admission. Spinal puncture was unsatisfactory as the fluid was bloody. Meningococcic meningitis was suspected and 10,000 U. of meningococcic antitoxin were given intravenously (no more available in the city), and neoprontosil was started.

By the second day all signs of increased intracranial pressure had gone. Spinal fluid was under 10 mm.; it was clear and a count revealed only three cells. The smear was negative. At this time the patient began to complain of pain in the left arm. On the third day of the disease the left elbow, wrist and all of the metacarpal phalangeal joints of the left hand had become red, swollen, hot and extremely painful to touch. The right second metacarpal phalangeal was similarly involved. The hemorrhagic rash had started to fade and a different type of skin lesion had manifested itself; this consisted of 2-3 mm. nodules with clear centers and erythematous borders. Consultation was called and a diagnosis of acute rheumatic fever was made. For the next three days salicylates were tried but this was unsatisfactory because of persistent nausea and vomiting. The temperature had leveled off after the day of onset and varied between 99.2° and 102.2°. The extremely painful polyarthritis, nausea and vomiting, and abdominal distension were the bothersome symptoms.

On the seventh day a growth was seen in the blood culture and neoprontosil was again started. On October 31, the eighth day, the organism found in the blood culture was identified as the meningococcus; 40,000 U. of antitoxin were given intravenously. A diagnosis of meningococcic septicemia with polyarthritis without meningitis was made.

For the next six days the patient suffered a moderately severe serum sickness consisting mainly of an urticarial rash. On November 7 she complained of pain in the right elbow joint; this was soon followed by swelling, redness and local heat of right elbow, forearms, wrist and joints of right hand. A generalized arthralgia was also complained of. This arthritis had reached its height by November 10 and had started to subside by the fourteenth. Because of tenderness over the liver, neoprontosil and sulfanilamide were stopped. Small blood transfusions were given on November 11 and 13 and were followed by marked improvement in the patient's general condition. Her appetite became excellent, her temperature ran between 98° and 99°, and on November 15 the w.b.c. was 10,200, pmn 66, pme 5, staff 7, L 16, and M 5. Physical examination was negative excepting for an increased malnutrition and generalized lymphadenopathy, consisting of shotty and soft glands. There were several shotty nodules in the occipital region that suggested subcutaneous nodules. Her only complaint was pain in the region of a swollen cervical gland on the left side of her neck.

Early on the morning of November 20, the twenty-eighth day of illness, and after one week's freedom from fever, the patient became restless, complained of aching in the eyes, neck and shoulders, and a generalized tenderness of the skin. These complaints were soon followed by nausea and vomiting and a severe chill which prostrated the patient. Temperature rose to 104.6°. A blood culture taken during the chill yielded a heavy growth in twenty-four hours of a gram-negative diplococcus which was agglutinated by meningococcic antiserum. Spinal puncture was repeated and the clear spinal fluid indicated no meningeal involvement. Neoprontosil was started again but sulfanilamide was substituted instead on November 25, five days after the recrudescence of fever, which dropped back to almost normal (99°) in three days.

The patient was discharged on December 1 to her home in Portland by ambulance, after having been free from fever for seven days. At the time of discharge the only positive physical findings were a generalized lymphadenopathy, consisting of a mixture of large soft glands and small shotty ones, and several tender nodules over the lower occiput; abduction of the left arm and supination of the left forearm were limited and painful.

Sulfanilamide was stopped on December 2. On December 3 she had a fever of 99° and on the next day was admitted to the St. Vincent's Hospital with fever of 104°, pulse 140, and respiratory rate of 25. Physical examination at this time was essentially negative except for some purulent nasal discharge, infection of the turbinates, palpable cervical lymph glands and sluggish deep reflexes. Sulfapyridine, grams 0.5 every two hours, was started but discontinued after a few doses because of nausea and vomiting, and sulfanilamide was given instead. This was discontinued on December 14. On December 18, four days after sulfanilamide was stopped, the patient had a chill, elevation of temperature associated with a fine macular rash, and pain and tenderness over the right sacroiliac joint.

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*From Student Health Service, University of Oregon, Eugene.

[1] Herrick, W. W.: Extrameningeal Meningococcus Infections. Arch. Int. Med., 23:409-418, April, 1919.

This recrudescence was essentially the same as those of November 20 and December 5; blood culture was again positive for the meningococcus. Sulfanilamide medication was resumed after a short trial with sulfapyridine which aggravated nausea and vomiting. The temperature remained elevated from between 102° and 104° for four days and did not return to normal (98°-99°) until January 2, fifteen days after the onset of the last exacerbation. Sulfanilamide was discontinued on January 7 after six days of normal temperature. Forty-eight hours after stopping the sulfanilamide a typical chill and elevation of temperature with fine macular rash occurred. The temperature receded after forty-eight hours to the usual low grade course of between 98° and 99°. Sulfanilamide was given for twenty-four hours and then sulfapyridine was substituted. The patient was able to tolerate sulfapyridine for the first time. The temperature remained practically normal and the sulfapyridine was discontinued on January 16.

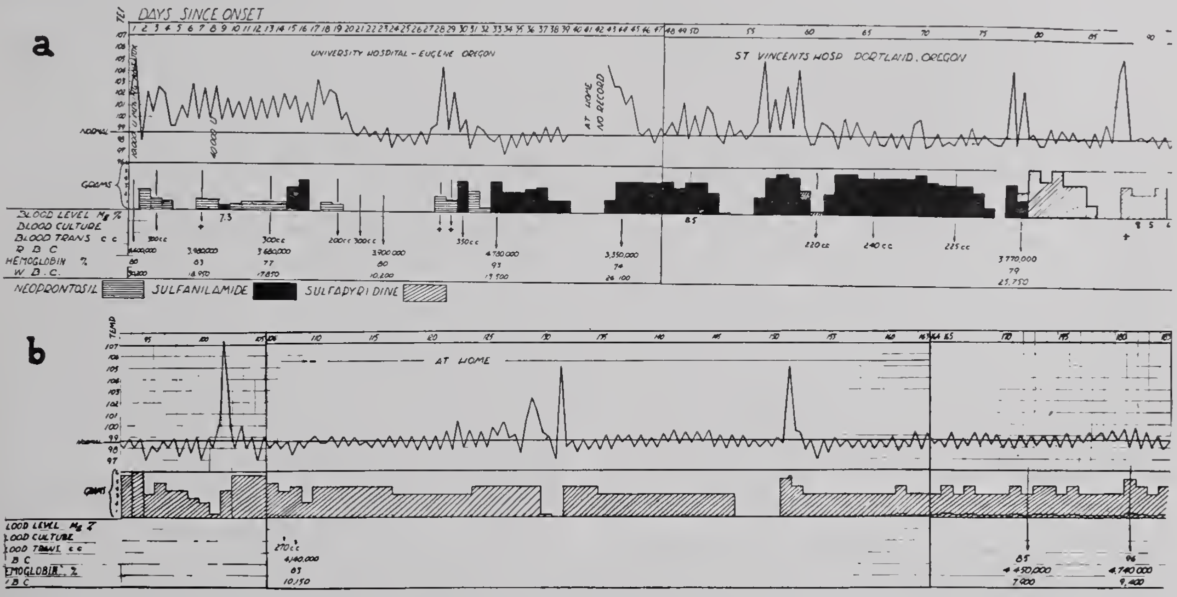

Chart 1. This chart shows the relation between discontinuance of one of the sulfanilmide drugs and recrudescence of fever.

At 1 a.m., January 19, about sixty hours after sulfapyridine had been discontinued, the patient had a chill, high fever, arthralgia and skin rash as before. Blood culture was again positive. Sulfapyridine was started again and the temperature dropped to 99° within twenty-four hours and after eleven days of normal temperature sulfapyridine was reduced. On February 2, the day after medication was reduced to 0.5 gram in twenty-four hours, the patient had a severe chill, high fever, arthralgia and macular rash. Temperature was recorded at 107.5° and pulse at 180. Sulfapyridine medication was resumed, and temperature dropped to 99° in forty-eight hours and to normal on February 6. Spinal fluid findings on February 3 were as follows: globulin negative, cell count 1 w.b.c., total protein negative, smear negative, and kolmer negative. A blood transfusion of 270 cc. was given on the seventh and on February 9 the patient was discharged by ambulance to her home.

The mother was instructed to give 0.5 gram of sulfapyridine every three hours for four days and then every four hours. The medication was kept up for twenty days and then stopped for two days; the discontinuation of medication was associated with a chill and a fever of 105° on March 2. Three to four grams of sulfapyridine were given for the next fourteen days and then discontinued for four days. On March 21 she complained of a loss of appetite, generalized soreness and she again had the characteristic chill and fever of 105°; three to four grams of sulfapyridine were given for the next thirty-four days. It was discontinued on April 21. The patient had no more attacks of fever, and gained strength rather gradually. She was seen on September 9 and at that time she weighed 110 pounds and looked and felt well. Aside from an absence of subcutaneous fat on the body above the thighs, physical examination was entirely negative.

The routine treatment consisted of maintaining the fluid intake to between 1500 and 2500 cc. in twenty-four hours; this intake was maintained by giving intravenous fluid when necessary. Vitamin medication consisted of thiamin chloride, 3000 U. intramuscularly per day started on October 28 and decreased to 1500 U. on November 1; Galen B z11

Days		*Gm. of Drug Neoprontosil*	*Gm. of Drug Sulfanilamide*	*Gm. of Drug Sulfapyridine*
1-19		5% Sol. 14.18 gm. (283 cc.)	8.3	
30	*Days*		4	
33-39	(7)		18.77	
43-52	(10)		36.56	3
56-60	(5)		19.1	
62-76	(15)		62.16	
79-85	(7)			29.0
88-100	(13)			45.5
102-130	(29)			111.5
133-145	(14)			45.0
151-184	(34)			116.0
Total		14.18 gm.	148.89	350.0

Table 1

t.i.d. was started instead on November 11. Vitamin C intake was kept up by giving 25 mg. of cevitamic acid t.i.d. Nicotinic acid, 100 mg. per day, was started November 11 in order to combat nausea and vomiting that had made sulfanilamide therapy impossible. This nicotinic acid was increased to a dose of 150 mg. after her admission to St. Vincent's Hospital and the vitamin B complex was given in the form of Galen B.

COMMENT

In the first place, this case presented difficulty in diagnosis. At the onset the picture of extreme hyperesthesia, rigidity of the neck and purpura were strongly suggestive of meningococcic meningitis. The rapid disappearance of signs of meningeal irritation and normal spinal fluid twelve hours after onset, following only 10,000 U. of meningococcic antitoxin and 52 cc. of 5 per cent neoprontosil, plus rapid development of acute polyarthritis, led to the diagnosis of rheumatic fever. Diagnosis of meningococcic septicemia with polyarthritis was not made until the eighth day, when the blood culture was reported positive for the meningococcus.

The confusion and delay in diagnosis was not unusual. Carbonell and Campbell,[2] in a review of thirty-three cases of meningococcemia, found that in most cases the diagnosis was not made until three to five weeks after onset of the disease. Hoyne[3] suggests that cultures be made from the skin lesions. Smears and cultures could have easily been made in this case as some of the lesions had a tendency to fluctuate and, if this had been done, the first diagnosis would have been confirmed much earlier.

As far as I can find, meningococcic septicemia falls generally into two categories: the acute fulminating and the chronic type. According to Herrick the death rate is extremely high in the first group. Hoyne makes the following statement: "There was a higher death rate among patients who were treated early than there was for those who entered the hospital late in the course of the disease. The solution for this occurrence lay in the fact that, as a rule, prompt diagnosis was established when meningitis was of a fulminating type and as a result treatment, which often proved futile, was instituted at once. But if the patient suffered less severely and especially if no petechiae were seen, several days elapsed before a physician was summoned and hospitalization ordered."

In going over reports of cases of meningococcic septicemia I find that many of them are of the chronic type. For example, of two cases reported by Binns and Clancy[4] of Nashville, Tenn., one gave a history of chills and fever, joint pains and erythematous nodules two months before admission (never bedfast); the other was ill seven weeks before admission.

In the case that I am reporting, the patient was seen early in the course of her disease, six hours before the purpuric rash made its appearance. She was a prostrated acutely ill patient and could not be classed at the onset as a chronic meningococcic septicemia, though she eventually became one.

Schwentker, Gelman and Long[5] treated ten cases of meningococcic meningitis with sulfanilamide alone and concluded that the results with chemotherapy seemed quite as good as those obtained with specific serum. The English, because of the increased incidence of meningitis in that country, have published a number of articles in regard to the use of sulfanlamidie and sulfapyridine in meningococcic infections. Bryant and Farman[6] reported a series of cases from the Sudan. Their usual mortality was from 65 to 90 per cent. They treated 168 cases with M & B 693 with eight deaths, and twenty-one cases with sulfanilamide with one death; the interesting fact was that the maximum total dose was only 3.25 grams.

The two cases that Zendel and Greenberg[7] reported responded to a surprisingly small dose: one case 40 cc. of neoprontosil and 14.40 grams of sulfanilamide; the other, 100 cc. of neoprontosil and 17.10 grams of sulfanilamide. Both of these cases made a prompt recovery.

Long and Bliss[8] advise in such infections as the meningococcic one that sulfanilamide should be given in adequate amounts, 3 to 5 gm. for the first dose, and 1 gm. every four hours until the infection is under control. Neoprontosil is not the drug of choice in a meningococcic infection; it was used in the case reported because of persistent nausea and vomiting which was bothersome from the onset. The patient presented a nutritional problem because she was thirty-six pounds underweight at the onset of her illness; she had no subcutaneous fat above the trochanters and this gave her a cachetic appearance. She retained sulfanilamide for the first time October 25 (33rd day) and was unable to tolerate sulfapyridine until the 79th day of the disease. Subcutaneous sulfanilamide had not been used in the city and sodium sulfapyridine could not be obtained.

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[2] Carbonell, A. and Campbell, E. P.: Prolonged Meningococcemia. Arch. Int. Med., 61:646-654, April, 1938.

[3] Hoyne, A. L.: Epidemic Meningitis. J. A. M. A., 115: 1852-1855, Nov. 30, 1940.

[4] Binns, F. and Clancy, J. J.: Chronic Meningococcemia Promptly Cured by Sulfanilamide. Am. J. Dis. Child., 57: 404-408, Feb., 1939.

[5] Schwentker, F. F., Gelman, S. and Long, P. H.: Teatment of Meningococcic Meningitis with Sulfanilamide. J. A. M. A., 108:1407-1408, April 24, 1937.

[6] Bryant, J. and Fairman, H. D.: Chemotherapy of Cerebrospinal Fever in the Field. Lancet, 1:923-926, April 22, 1939.

[7] Zendel, J. F. and Greenberg, D.: Meningococcemic: Treatment with Sulfanilamide and Prontosil. New York State J. Med., 37:1744-1748, Oct. 15, 1937.

[8] Long, P. H. and Bliss, E. A.: Clinical Use of Sulfanilamide and Its Derivatives in Treatment of Infectious Diseases. Ann. Int. Med., 11:576-592, Oct., 1937.

Chemotherapy was inadequate during the first six weeks of the disease and this was contributed to by (1) confusion in the diagnosis, (2) persistent nausea and vomiting and the use of neoprontosil instead of subcutaneous sulfanilamide, or intravenous sodium sulfapyridine, (3) misinterpretation of the increase in fever and hepatic tenderness as being due to a toxic reaction to sulfanilamide.

Banks[9] cautions against the low dosage of sulfanilamide or sulfapyridine at the onset. He states that this may produce a resistant strain of the meningococcus which cannot be controlled by higher doses later in the course of the disease. Even though the doses of sulfanilamide and sulfapyridine were adequate during the last twenty weeks of the patient's illness, the results could not be called satisfactory. Withdrawal of either drug was associated with a series of relapses. One relapse followed 111.5 gm. of sufapyridine given over a period of twenty-nine days. The relative failure of chemotherapy in this case can be explained on the basis of drug fastness which had every opportunity to develop during the first six weeks of the disease.

The quantity of sulfapyridine that the patient took is interesting. She took 347 gm. of it during the last 105 days of her illness and the only persistent sign of toxicity from this drug was nausea and vomiting; these symptoms bothered some during the entire time that sulfapyridine was given. The hemoglobin dropped to 55 per cent six days after sulfapyridine was started. Two transfusions were given: one of 240 cc. on the 87th day, and 270 cc. on the 107th day. The hemoglobin was 83 per cent on the 109th day, and though 227.5 gm. of sulfapyridine were given subsequently, the hemoglobin was 98 per cent on the 181st day. This would indicate that the drop in hemoglobin must have been due to infection rather than to the drug. The macular rash that became manifest with each recrudescence is characteristic of the infection and not of a drug rash. During the patient's stay in the hospital a record was kept of the intake and output and there was no indication of a suppression of the output of urine.

SUMMARY

1. The case presented is one of acute meningococcemia with polyarthritis which presented the usual difficulties in diagnosis.

2. Inadequate chemotherapy during the first six weeks was followed by an unsatisfactory response to sulfanilamide and sulfapyridine in the last eighteen weeks of the disease. This can best be explained as being due to "drug fastness."

3. The prolonged period of chemotherapy resulted in large total doses of sulfanilamide and sulfapyridine, 136.59 gm. and 350 gm. respectively. The only toxic reaction attributable to either drug was nausea and vomiting.

4. Five months after medication was discontinued the patient showed no signs of damage from the disease or the medication.

Note: I am indebted to Dr. Merl L. Margason of Portland for the complete record of this case.

[9] Banks, H. S.: Chemotherapy of Meningococcal Meningitis: Review of 147 Consecutive Cases. Lancet, 2:921-926, Oct. 28, 1939.

BONE TUMOR

PROBLEM OF DIAGNOSIS

C. Grant Bain, M.D.
CHEHALIS, WASH.

A well known pathologist once said his hair had turned grey deciding whether limbs should be amputated or not.

This tumor was in the head of the left tibia in a man of twenty-two. He gave a history of recent injury in that he had sat on a crowbar while it was in the flexed knee, when prying up a railroad tie. He came under state industrial insurance. He also gave a history of having had some pain in the same knee for perhaps a year but worse for a month.

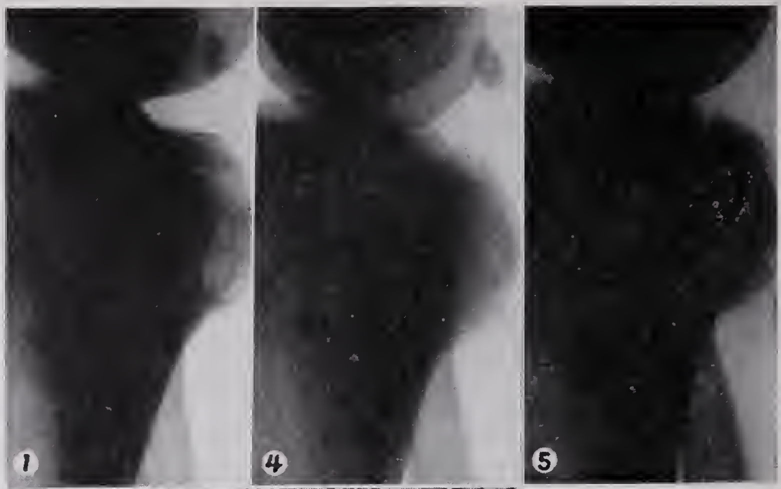
There was slight swelling of the knee joint. Examination otherwise was negative. Rest and heat gave relief for a few weeks, but then night pain developed and a roentgenogram revealed a tumor the size of a walnut in the medial condyle at proximal end of the tibia (fig. 1).

Exploratory operation for biopsy was done on May 25, 1936, and showed "a thickened periosteum with a thinned cortex." The marrow (tumor) appeared "granular, yellowish, firm and avascular." It did not give the impression of a malignant process.

Pathologist's preliminary report, June 3, after much study indicated a "benign lesion" but there was a question of malignancy. "The more I study the sections the more convinced I am that the lesion is benign but I am not certain as to its exact nature and will continue my study." Roentgenologic reports never supported a diagnosis of malignancy. They suggested osteochondroma. It was advised, however, to remove the tumor. This was done June 6 by thorough curettment and specimen sent for study by the pathologist.

The roentgenologist's report on June 3 was as follows:

> The films reviewed include three studies of the left knee, dated March 14, 1936, subsequent studies undated. In addition, there are two views of the skull and a single study of the chest.
>
> The original studies of the left knee, including lower end of femur and upper lesion involving the proximal cancellous ends of tibia and fibula, demonstrate a portion of the tibia, approximately midway between medial and lateral surfaces and posteriorly extending out from the surface into the soft tissues. The lesion is in immediate proximity to the articulating surface but does not involve it. This lesion is characterized by a destructive and productive process and there is a zone of proliferation around its periphery as viewed in the anteroposterior projection. The cortex is thickened, expanded but intact. The lesion does not infiltrate soft tissue. On the lateral surface of the tibia just below the tibiofibular articulation there is a small bony exostosis.
>
> Subsequent films all demonstrate the above described lesion and show no definite progress insofar as we can determine.
>
> The films of the skull reveal no change in any of the bones of the cranial vault. The sella turcica is within the limits of normal as to size. I see nothing to indicate intracranial pathology.
>
> The single view of the chest demonstrates a normal bony cage. The costophrenic angles are clear. There is no demonstrable mediastinal adenopathy and the lung fields reveal no definite pathologic change. The cardiac and supracardiac shadows are within the limits of normal as to size.



Figs. 1, 4, 5 show stages of tumor as described in text.

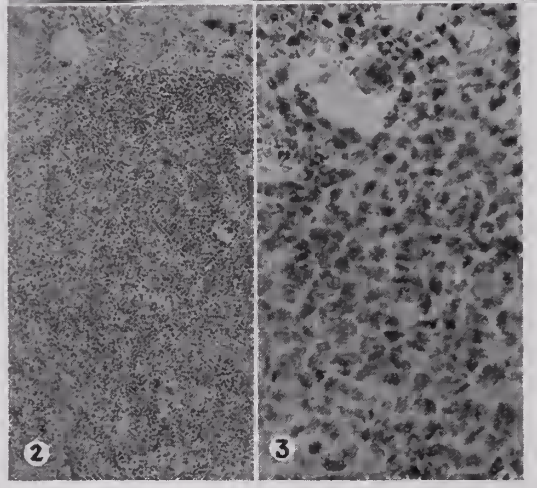


Fig. 2, low power section of tumor; fig. 3, high power.

After further study the following report was received from the pathologist, dated June 13.

> This has been an exceptionally difficult case. On May 28 I wrote you in part as follows: "The marrow you sent contains considerable bone. Much of this is more or less necrotic and some is partially decalcified. There is some evidence of a chronic osteomyelitis. In addition, however, there are a few cellular areas which show fairly frequent mitotic figures."
>
> These cellular areas are present in practically every section. It is their interpretation which has given such difficulty. After hours of careful study of many sections I am convinced that they indicate malignancy, and I wired you last night, June 12, as follows: "Unless I am mistaken the patient has an osteogenic sarcoma."

The pathologist reported later:

> Probably an osteogenic sarcoma of tibia. Blood clot undergoing organization and seemingly containing no malignant cells.
>
> Diagnosis of sarcoma is based mainly on the following facts: (1) increased mitoses, (2) polymorphism in the nuclei, (3) intimate relation of tumor cells to thin-walled blood vessels, (4) apparent destruction and absorption of bone by tumor cells.
>
> Only after cutting and studying many sections did the diagnosis finally seem established (figs. 2, 3).

Clinical progress was entirely satisfactory but on August 20 a prominent pathologist in consultation also made a diagnosis of osteogenic sarcoma from a study of the slides. Another pathologist concurred independently on September 1.

Roentgen treatment was advised and begun September 18 and extended over a month. Report then indicated no evidence of progress and again maintained a benign diagnosis.

On November 23 roentgenograms showed a negative chest and:

> Check-up, A. P., and lateral studies of the knee reveal definite evidence of bone production at periphery and within previously rarefied area. There certainly has been no tendency to progress, and certainly there is no evidence roentgenologically to indicate malignant change in what we have believed to be a benign tumor. We accept, of course, the histologic diagnosis of malignancy.

On January 5, 1937, roentgen report says, "certainly there is no evidence whatever to indicate a progressive neoplastic involvement." March 16, 1937, "we do not feel there is definite roentgen evidence to indicate any significant change." June 11, 1937, "we see no evidence whatever to indicate reactivity with pathologically osteogenic sarcoma." October 15, 1937, "we believe we can be encouraged with the progress of this case." January 5, 1938, "no significant change. Certainly nothing to indicate any progress." November 17, 1938, same condition (fig. 4). June 13, 1939, "we see nothing to indicate reactivity." August 31, 1940, "appears in best of health and roentgenograms show no changes." (fig. 5).

It is almost five years now since the history started and, if the surgeon had been inclined to early greyness, this case would have left its mark. Evidently the lesion was benign, was cured by roentgen therapy if malignant, or a fortunate method of surgical management has been used if early malignancy was present. We are all more than pleased with the outcome.

POSTGRADUATE LECTURES

During the year postgraduate courses of lectures are scheduled for the profession in our three states. In order that these courses may become well known, and be presented to the readers of this journal from month to month, they will be hereafter listed under the above heading with certain details pertaining to each as they may be received for publication. In this issue appear data which have been received descriptive of each course of the lectures. In the future issues it is expected that these will be supplemented as more information is received concerning each of them.

OREGON

Oregon State Medical Society
67th annual session and postgraduate assembly
Portland, September 2-5

Portland Academy of Medicine
Portland, September 2-3
Guest Speaker
Ralph M. Waters, M.D., Professor of Anesthesiology
University of Wisconsin Medical School
Madison, Wis.
Subjects

1. The Service of Anesthesiology in the Modern Hospital, Within Operating Room.
2. Service of Anesthesiology in the Modern Hospital, Outside Operating Room.

This program will be coordinated with that of the 67th State Medical Society.

IDAHO

STATE MEDICAL ASSOCIATION ANNUAL LECTURES

Sun Valley, June 23-27, 1942

At the annual meeting of Idaho State Medical Association for 1942 the guest speakers for the annual lectures will include members of the faculty of University of Oregon Medical School.

WASHINGTON

PSYCHIATRIC INSTITUTE

Western State Hospital, Fort Steilacoom
September 1-13.

This will be the fourth institute on postgraduate psychiatric education for state hospitals held under auspices of American Psychiatric Association Committee on Psychiatry in Medical Education. Invitations have been extended to state institutions of thirteen states and western Canada. Members of the medical profession, registered nurses and social service groups are invited to be present. Attendance free. The program includes lectures and clinics on a variety of psychiatric subjects.

Speakers for the institute include the following:

T. A. C. Rennie, Associate Professor of Psychiatry, Phipps Clinic, Johns Hopkins.
William Malamud, Clinical Director of Psychiatry, Massachusetts State Hospital, Worcester.
Franklin G. Ebaugh, Director of Psychiatry, Colorado Psychopathic Hospital, Denver.
Lydia Giberson, Psychiatrist for Metropolitan Life Insurance Company, New York.
Frederick Lemere and Edward D. Hoedemaker, psychiatrists, Seattle.
J. E. Raaf, brain surgeon, Portland, Oregon.
K. A. Meninger, Meninger Clinic, Topeka, Kansas.
Walter Freeman, secretary American Board of Psychiatry and Neurology, Washington, D. C.
Miss Henrietta Adams, Director of Nursing Education, University of Washington, Seattle.

OREGON STATE MEDICAL SOCIETY

GUEST SPEAKERS

SIXTY-SIXTH ANNUAL SESSION.
Portland, September 3-6, 1941

FRANK H. LAHEY, M.D.
President of the American Medical Association, Boston, Mass.

HENRY J. TUMEN, M.D.
Assistant Professor of Medicine Medico-Chirurgical College Graduate School of Medicine, University of Pennsylvania, Philadelphia

GEORGE M. CURTIS, M.D.
Professor of Surgery, Ohio State University of Medicine, Columbus, Ohio

MILTON B. COHEN, M.D.
President, American Society for the Study of Allergy, Cleveland, Ohio

RALPH M. WATERS, M.D.
Professor of Anesthesiology, University of Wisconsin Medical School, Madison, Wisconsin
(Guest speaker through courtesy of Portland Academy of Medicine).

MILTON B. COHEN, M.D.

RALPH M. WATERS, M.D.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-SEVENTH ANNUAL MEETING, PORTLAND, SEPT. 2-5

OREGON STATE MEDICAL SOCIETY

Sixty-seventh Annual Session, University of Oregon Medical School, Portland, Oregon

KARL H. MARTZLOFF, President

PRESIDENT'S MESSAGE

Portland, Oregon, July 24, 1941.

The time for another annual meeting of Oregon State Medical Society is approaching. This year's session represents a phase in the history of our organization that should demand the attention of each one of our members. Ours is a democratic organization; therefore, its welfare and future depend upon the interest and participation of its individual members.

Our annual meetings serve a three-fold function. The first of these is the transaction of the official business of the society by the House of Delegates. This is an indispensable function, particularly in times like the present when various socialistic and communistic concepts gain a certain amount of credence and certain uninformed persons, and others with selfish motives, hope to see the medical profession enslaved under some form of politically controlled medical bureaucracy. To prevent such a disaster, the medical profession must stand united. One way of obtaining this necessary solidarity is for each member to take an active interest in the business affairs of the society.

The second function of our annual meetings is to stimulate good fellowship. Each meeting offers the opportunity to develop the intangible, but nevertheless firm, bulwark of personal friendship among members from various parts of the state.

Finally, the postgraduate aspect of this year's session as well as previous meetings, is in keeping with the best traditions of scientific medicine, in that it helps to insure an increasingly proficient medical profession. At the same time it insures a continuous improvement in the quality of medical service and thereby promotes the public welfare.

Our program this year presents an interesting departure from previous years in that panel discussions are planned. These panels provide an informal and friendly atmosphere where frank discussion is possible. It is hoped that we may have a record attendance at this year's meeting.

Karl H. Martzloff, *President.*

POSTGRADUATE OPPORTUNITY

New developments in scientific medicine are occurring with such rapidity that, in order to deliver the best medical service, physicians need continuous opportunity for postgraduate study. So far as it can, organized medicine should make available this instruction. Recognizing its central role in postgraduate instruction, the Oregon State Medical Society last year adopted a three-year program designed to provide a centralized course in connection with the annual session.

This program was inaugurated at the 1940 session, at which three days of intensive instruction in medicine, endocrinology, surgery and orthopedics were offered by guest clinicians of national reputation. This year the postgraduate program of the society is continued with a series of well organized presentations in surgery, gastroenterology, allergy and anesthesiology by five guest speakers, each outstanding in his respective field.

PORTLAND, THE CITY OF ROSES

A NOTABLE MEDICAL CENTER

Once again the annual session of Oregon State Medical Society returns to Portland, the City of Roses. It always seems highly appropriate that the society meet in Portland which is one of the most complete medical centers in the nation, with the University of Oregon Medical School atop Marquam Hill, and the numerous other public and private medical facilities. Sessions of this year's meeting will be held on the Medical School campus.

A notable addition has been made to the Medical School since the society last met in Portland, namely, the new $300,000 library. An initial gift of $100,000 was made by Dr. John E. Weeks, a gift matched by the Rockefeller Foundation and the federal government. Modern in appointments, and more than adequate to care for the school's books, the library today is the most beautiful building of the $3,000,000 Marquam Hill group.

The library includes an auditorium so constructed that acoustics are perfect. Seats are constructed for comfort and upholstered in becoming blue. A small stage guarantees vision. And here it is that the physicians of Oregon will meet to learn of the latest developments in medicine and surgery.

Visiting physicians will be interested in viewing the new portrait of Dean Richard B. Dillehunt, recently completed by Sidney Bell, Portland artist. The portrait, done at the instance of the Medical School faculty, is being placed in the faculty room of the library.

Another notable addition to the Medical School center is the new eighty bed University State Tuberculosis Hospital. Funds for the hospital were provided by a state appropriation of $110,000, a PWA grant of $130,900 and a gift from the family of the late Julius L. Meier, for whom the outpatient clinic of the hospital is named.

Landscaping of the campus will also be new to many visitors. Armed with WPA orders, crews reconstructed parking facilities and rebuilt lawns to give new beauty to the grounds. Things unchanged: the marvelous view of the city and Mount Hood.

Portland's hospital facilities will soon be augmented by the 200-bed Providence Hospital, the new unit of St. Vincent's Hospital, now nearing completion at N. E. 47th Avenue and N. E. Glisan Street. The principal departments of this new institution will be pediatrics and internal medicine, pediatric surgery and pediatric orthopedics. This arrangement will leave St. Vincent's Hospital mainly a surgical and maternity hospital, including the various phases of surgery, such as orthopedics, urology, etc. The interne service of the two hospitals will be coordinated into these departments. The organization of the staff and services is now being effected under the direction of Dr. Thomas D. Robertson, who is now pathologist and chairman of the internes at St. Vincent's hospital and who will assume these same duties at the new unit.

A need long felt in Portland has recently been met by the establishment by Hahnemann Hospital of its new $50,000 neuropsychiatric department. This department, which includes twenty-six beds, has largely replaced the small private sanitariums which for many years have been the only local facilities available to neuropsychiatric patients. The primary purpose of the new department is not to care for patients over a prolonged period, but to provide facilities for treatment of patients, whom psychiatrists believe will respond to treatment within a relatively short period. Outstanding features of the new department are the hydrotherapeutic rooms, the seclusion section, the attractive private rooms in the general section, and the solarium and vocational room.

The city's facilities for obstetric patients will shortly be increased by a new wing to Wilcox Memorial Hospital, the maternity annex to Good Samaritan Hospital, which is now under construction. Plans provide for a three-story

AIR VIEW OF UNIVERSITY OF OREGON MEDICAL SCHOOL AND HOSPITALS.
Central building, MEDICAL SCHOOL. *Left front,* MEDICAL LIBRARY. *Right front,* DOERNBECHER HOSPITAL. *Right middle,* MULTNOMAH COUNTY HOSPITAL. *Connecting latter two buildings,* OUT-PATIENT CLINIC. *Right rear,* NURSES' HOME.

brick addition and the complete modernization of the present structure. The new addition will triple the capacity of the present maternity hospital. A gift of $50,000 from the late Mrs. Theodore M. Wilcox was made toward the cost of the new construction which will aggregate $167,000.

Emanuel Hospital also has under construction a seventy-bed addition to its maternity hospital at a cost of $125,000.

Who needs to be "sold" on Portland? The city is rich in attractions and charms for the visitor. It is noted for its parks which dot almost every section of the city, for its statuary and art and spots of historic interest. Delightful drives within the city are at one's command with scores of enjoyable trips reaching out into the magnificent surrounding country. Golf, boating, swimming, all are within a few minutes of downtown hotels.

Portland doctors are happy to have as their guests at their clubs visiting physicians from upstate. A cool drink on the porch or dinner on the terrace makes a pleasant finale to a tough game.

Sailing on the Columbia, boating at Oswego, tennis at the Racquet Club. There's plenty to do if the visiting physician goes on the theory that "all work and no play makes 'Doc' a dull boy."

The foregoing is given as an incentive to bring the whole family for a bit of vacation (you might stretch the vacation into the next week which brings the Pendleton Round-Up. Or the family could go to Salem for one day during the session for the Oregon State Fair.) For the physician, there is no greater incentive to attend than the program itself.

UNIVERSITY OF OREGON MEDICAL SCHOOL LIBRARY.
Scientific Sessions Will Be Held Here.

Dates of this year's session tie in as a "natural" with labor day. Upstate physicians may plan a labor day holiday to the beaches, mountains, lakes; then point for Portland and the medical meeting.

While physicians are busy at sessions, wives will find an excellent opportunity to shop, seeing the latest in fall styles featured in Portland's many smart stores, perhaps outfitting son John for his second year in high school. Sister Jane can learn firsthand in the college shops of most of Portland's stores what they'll be wearing at the University this year. Many birds killed with one stone.

Entertainment by night. Good places to eat: Jake's, famous for crawfish; Oregon Oyster House with its steaming oyster stew and heaping crab cocktails; Ireland's on Lake Oswego, where you eat and watch the swans sail over the water; the Portland Hotel, where veteran Negro waiters serve those fresh mushroom omelets; the Oyster Loaf, where sizzling steaks are still the specialty; Huber's for turkey.

Theaters and taverns fill downtown Portland to provide entertainment for all members of the family. Even dad will enjoy "seeing the sights" when not attending sessions.

Or does dad prefer "the outdoor life" for free moments. Portland has nineteen golf courses in or adjacent to the city; 342 holes which should be enough for any man. Three of these courses are municipal, nine public and seven private.

POSTGRADUATE PROGRAM

Guest Speakers

FRANK H. LAHEY, M.D.
President, American Medical Association,
Boston

GEORGE M. CURTIS, M.D.
Professor of Surgery, Ohio State University College
of Medicine, Columbus

HENRY J. TUMEN, M.D.
Assistant Professor of Medicine, Medico-Chirurgical
College, Graduate School of Medicine,
University of Pennsylvania,
Philadelphia

MILTON B. COHEN, M.D.
President, American Society for the Study
of Allergy, Cleveland

RALPH M. WATERS, M.D.
Professor of Anesthesiology, University of Wisconsin
Medical School, Madison
(Through courtesy of Portland Academy of Medicine.)

No registration fee for members. Registration fee of $10 for eligible nonmembers. Members of other state medical associations are cordially invited and may attend without fee.

Surgery
Frank H. Lahey, President, American Medical Association

1. "Some of the Newer Developments in Medicine and Surgery."

George M. Curtis, Professor of Surgery, Ohio State
University College of Medicine

1. "Iodine and Calcium Metabolism in Thyroid Disease."
2. "Recent Advances in Thoracic Surgery."
3. "Recognition and Management of Acute Injury to Chest."

Gastroenterology

Henry J. Tumen, Assistant Professor of Medicine, Medico-Chirurgical College, Graduate School of Medicine,
University of Pennsylvania

1. "Diagnosis and Treatment of Jaundice."
2. "Management of Patient with Irritable Colon."
3. "Clinical and Gastroscopic Features of Chronic Gastritis."

Allergy

Milton B. Cohen, President, American Society
for the Study of Allergy

1. "Nature of Allergy, Its Pathology and Mechanisms of Its Production."
2. "Management of Patients with Asthma, Hay Fever and Other Allergic States."
3. "Growth Disturbances Produced by Allergy."

Anesthesiology

Ralph M. Waters, Professor of Anesthesiology,
University of Wisconsin Medical School

1. "Service of Anesthesiology in the Modern Hospital, within Operating Room."
2. "Service of Anesthesiology in the Modern Hospital, outside Operating Room."

PANEL DISCUSSIONS

Medicine

1. "Clinical Aspects of Chemotherapy."
   Panel Board: Norman A. David, Portland, Chairman; Roger H. Keane, Portland; Joseph P. Brennan, Pendleton.
2. "Deficiency Diseases and Vitamin Therapy."
   Panel Board: Frank R. Mount, Portland, Chairman; J. V. Straumfjord, Astoria; Donald E. Forster, Portland.
3. "Medical Problems Peculiar to the Aged."
   Panel Board: John R. Montague, Portland, Chairman; Homer P. Rush, Portland; Irvin R. Fox, Eugene.

Surgery

1. "Treatment of Acute Head Injuries."
   Panel Board: Eugene W. Rockey, Portland, Chairman; John Raaf, Portland; Ralph M. Dodson, Portland.
2. "Management of Acute Cholecystitis."
   Panel Board: Thomas M. Joyce, Portland, Chairman; W. B. Holden, Portland; Dean B. Seabrook, Portland.
3. "Relation of the Surgeon to the State Industrial Accident Commission."
   Panel Board: Mr. Ralph E. Jackson, Claim Agent, Oregon State Industrial Accident Commission, Salem, Chairman; James C. Hayes, Medford; H. R. Kaufman, Toledo. Other members to be announced later.

Orthopedics

1. "Disabilities and Fractures of Knee Joint."
   Panel Board: Richard B. Dillehunt, Portland, Chairman; Harry C. Blair, Portland; Gilbert J. McKelvey, Portland.
2. "Fractures of the Hip Joint."
   Panel Board: Otis F. Akin, Portland, Chairman; Charles R. McClure, Portland; A. Gurney Kimberley, Portland.

1. "Pelvic Tumors Complicating Pregnancy."
   Panel Board: Albert W. Holman, Portland, Chairman; E. E. Gambee, Portland; Howard C. Stearns, Portland.

2. "Immediate and Delayed Repair of Pelvic Relaxation."
   Panel Board: Theodore W. Adams, Portland, Chairman; Roderick C. Blatchford, Portland; R. Lindsay McArthur, Portland; G. S. Beardsley, Eugene.

Dermatology and Syphilology

1. "Common Fungous Diseases and Their Treatment."
   Panel Board: Lyle B. Kingery, Portland, Chairman; Thomas S. Saunders, Portland; Leon F. Ray, Portland.
2. "Early Syphilis: Its Diagnosis and Treatment."
   Panel Board: Alfred H. Illge, Portland, Chairman; Joyle Dahl, Portland; John H. Labadie, Portland.

Allergy

1. "Therapeutics in Allergy."
   Panel Board: Merle W. Moore, Portland, Chairman; Robert L. Benson, Portland; Frank Perlman, Portland.

Psychiatry

1. "Physiologic Responses in Anxiety States."
   Panel Board: D. C. Burkes, Portland, Chairman; Henry H. Dixon, Portland; Wendell H. Hutchens, Portland; John W. Evans, Portland.

Radiology

1. "Roentgen Therapy: Its Utilization in Malignancies and Inflammations."
   Panel Board: Frank E. Butler, Portland, Chairman; James B. Haworth, Portland; J. M. Hilton, Klamath Falls.
2. "Roentgen Study of Cholecystitis: Its Alteration of Normal Intestinal Gradient."
   Panel Board: William Y. Burton, Portland, Chairman; Dorwin L. Palmer, Portland; Sherman E. Rees, Portland.

Military Medicine

1. "Selective Service Examinations."
   Panel Board: Frank R. Mount, Portland, Chairman; Verden E. Hockett, Lieutenant-Commander, MC-V (G), U. S. Naval Reserve, State Medical Officer, Selective Service, Salem; Lewis N. Adams, Lieutenant, Medical Corp, Portland; Charles O. Sturdevant, Portland; R. Lloyd Tegart, Portland.

CLINICS

Clinics will be held at Emanuel Hospital, Good Samaritan Hospital, Hahnemann Hospital, Portland Sanitarium and Hospital and St. Vincent's Hospital on Tuesday, September 2, and at Doernbecher Memorial Hospital, Multnomah Hospital, and University State Tuberculosis Hospital on Friday, September 5. Details concerning the clinics appear in the program.

ADVANCE REGISTRATION

As the attendance at each panel discussion and clinic must be limited, it will be necessary for members to register in advance for the panel discussions and clinics they desire to attend. Reservations will be made in the order of receipt of requests. A schedule and form on which members may indicate their preferences will be mailed several weeks in advance of the meeting.

GENERAL INFORMATION

Headquarters

Headquarters for the Session will be at University of Oregon Medical School on Marquam Hill, either in the Medical Science Building or the Library and Auditorium Building. All activities, including Scientific Sessions and Scientific and Technical Exhibits will be housed in these buildings.

Woman's Auxiliary Headquarters

Headquarters for Woman's Auxiliary will be the Auditorium of the Medical Dental Building, S. W. 11th Avenue and Taylor Street.

Registration and Issuance of Badges

Members should register at the registration desk in the Medical Science Building as soon as they arrive at the meeting. Membership cards for 1941 should be presented at time of registration, which means that annual dues must be paid prior to, or at the time of registration.

House of Delegates

Three meetings of the House of Delegates have been scheduled. The first will be a dinner meeting on Wednesday, September 3, at 6:00 p.m., in the Faculty Dining

Room in the Medical Science Building at the Medical School. The second meeting on Thursday, September 4, will be a dinner meeting at 6:00 p.m., at Heathman Hotel, S. W. Park and Salmon Street. The third meeting will be a breakfast meeting on Friday, September 5, at 7:00 a.m., at Heathman Hotel. The House of Delegates will receive annual reports and recommendations of committees and give consideration to a number of matters of fundamental policy. All members are privileged to attend the meetings of the House and are earnestly urged to do so.

Annual Banquet

The annual banquet will be held on Friday, September 5, at 6:30 p.m., at Hotel Multnomah. Wives of physicians attending the meeting are invited. The banquet will be informal.

Golf Tournament

The Fifteenth Annual Oregon Medical Golf Tournament will be held on Tuesday, September 2, at 1:30 p.m. at Columbia-Edgewater Country Club. A greens fee of $1 will be charged. The permanent trophy will again be open to competition. This trophy must be won three times to enable the holder to retain permanent possession. It is awarded annually for the lowest net score. Carl H. Phetteplace of Eugene won the trophy last year. Additional prizes will also be offered.

Make Hotel Reservations Now

It is highly important that delegates and members make early reservations of rooms by communicating directly with the hotel of their choice. Delegates will find it convenient to register at the Heathman Hotel, where two of the three sessions of the House of Delegates will be held.

PROGRAM

Tuesday, September 2.

CLINICS

Attendance Limited

Emanuel Hospital

9:00 a.m. Surgery. Intestinal Resection: W. H. Bueermann.
Pelvic Operation: Raymond E. Watkins and Howard C. Stearns.
Thyroidectomy: Karl P. Moran.
9:00 a.m. Proctologic Surgery. Rectal Operation (with Caudal Anesthetic): W. W. Black.
Orthopedics. Excision of Semi-Lunar Cartilage: Richard B. Dillehunt and Leo S. Lucas.

Clinical Pathologic Conference

10:00 a.m. Surgery. Herniorrhaphy with Fascial Repair: Oliver M. Nisbet.
Radical Mastectomy for Carcinoma: G. W. Brunkow.
Proctologic Surgery: Rectal Operation: W. W. Black.
Orthopedics. Richard B. Dillehunt and Leo S. Lucas.
Medicine. Symposium on Diseases of Liver:
Edmund H. Berger, Roger H. Keane, Albert L. Severeide, H. H. Foskett and G. W. Millett.

Good Samaritan Hospital

8:00 a.m. Surgery. Intestinal Resection: Eugene W. Rockey.
Orthopedics (Dry Clinic). Otis F. Akin and C. Elmer Carlson.
9:00 a.m. Plastic Surgery. A. G. Bettman.
10:00 a.m. Surgery. Harry E. Shoot.
2:00 p.m. Medicine. Diabetes: Blair Holcomb and Rudolph M. Crommelin.

Hahnemann Hospital

1:30 p.m. Psychiatry. Inspection of Hydrotherapy Unit.
Presentation of Cases:
Acute Manic Depressive Excitement: Wendell H. Hutchens.
Reactive Depression: Henry H. Dixon.
Insulin Shock Therapy: John W. Evans.
Metrazol-Curare and Electric Shock Therapy: Charles O. Sturdevant.

Portland Sanitarium and Hospital

9:00 a.m. Medicine. Wesley E. Gatewood.
10:00 a.m. Pediatrics. Demonstration of Modern Nursery Equipment and Technic in the Care of the Newborn: S. G. Henricke.
10:30 a.m. Orthopedics. Leo. S. Lucas.
11:00 a.m. Clinical Pathology. Lecture and Demonstration on Erythroblastosis Fetalis: Warren C. Hunter.

St. Vincent's Hospital

9:00 a.m. Clinical Pathological Conference.
10:00 a.m. Surgery. Herniorrhaphy with Repair: Thomas M. Joyce.
11:00 a.m. Orthopedics (Dry Clinic). Harry C. Blair, H. vH. Thatcher, Joe B. Davis and Gilbert J. McKelvey.

FIFTEENTH ANNUAL OREGON MEDICAL GOLF TOURNAMENT.

Columbia-Edgewater Country Club.

12:30 p.m. No-host Luncheon for Participants.
1:30 p.m. Tournament.
6:00 p.m. No-host Dinner for Participants; Awarding of Prizes.

Wednesday, September 3

University of Oregon Medical School

8:30 a.m. Registration. Lobby of Medical Science Building.

GENERAL SCIENTIFIC SESSION

Auditorium of Library Building

Karl H. Martzloff, Portland, or George E. Henton, Portland, Presiding

9:00 a.m. "Nature of Allergy, Its Pathology, and the Mechanism of Its Production": Milton B. Cohen, Cleveland.
10:00 a.m. "Diagnosis and Treatment of Jaundice": Henry J. Tumen, Philadelphia.
11:00 a.m. "Iodine and Calcium Metabolism in Thyroid Disease": George M. Curtis, Columbus.
12:00 a.m. Conference of Component Society Committees on Maternal and Child Health. Faculty Dining Room, Medical Science Building.
(Luncheon Facilities at Medical School.)

Panel Discussions

1:30 p.m. "Clinical Aspects of Chemotherapy."
Panel Board: Norman A. David, Portland, Chairman; Roger H. Keane, Portland; Joseph P. Brennan, Pendleton.
"The Treatment of Acute Head Injuries."
Panel Board: Eugene W. Rockey, Portland, Chairman; John Raaf, Portland; Ralph M. Dodson, Portland.
"Common Fungous Diseases and Their Treatment."
Panel Board: Lyle B. Kingery, Portland, Chairman; Thomas S. Saunders, Portland; Leon F. Ray, Portland.
"Pelvic Tumors Complicating Pregnancy."
Panel Board: Albert W. Holman, Portland, Chairman; Raymond M. McKeown, Marshfield; E. E. Gambee, Portland; Howard C. Stearns, Portland.
3:00 p.m. Recess to visit Scientific and Technical Exhibits.
3:30 p.m. "Defiiciency Diseases and Vitamin Therapy."
Panel Board: Frank R. Mount, Portland, Chairman; J. V. Straumfjord, Astoria; Donald E. Forster, Portland.
"Therapeutics in Allergy."
Panel Board: Merle W. Moore, Portland, Chairman; Robert L. Benson, Portland; Frank Perlman, Portland.
"Disabilities and Fractures of the Knee-Joint."
Panel Board: Richard B. Dillehunt, Portland, Chairman; Harry C. Blair, Portland; Gilbert J. McKelvey, Portland.
"Roentgen Therapy: Its Utilization in Malignancies and Inflammations."
Panel Board: Frank E. Butler, Portland, Chairman; James B. Haworth, Portland; J. M. Hilton, Klamath Falls.
5:00 p.m. Recess to visit Scientific and Technical Exhibits.
6:00 p.m. Dinner Meeting of House of Delegates, Faculty

Dining Room, Medical Science Building. All members are invited to attend.

8:00 p.m. "Service of Anesthesiology in the Modern Hospital, Outside the Operating Room!"
Ralph M. Waters, Madison.
(Through Courtesy of the Portland Academy of Medicine).

Thursday, September 4.

GENERAL SCIENTIFIC SESSION

Auditorium of Library Building.
Karl H. Martzloff, Portland, or George E. Henton, Portland, Presiding.

8:30 a.m. "Management of Patients with Asthma, Hay Fever, and Other Allergic States":
Milton B. Cohen, Cleveland.

9:30 a.m. "Management of Patient with Irritable Colon": Henry J. Tumen, Philadelphia.

10:30 a.m. Recess to Visit Scientific and Technical Exhibits.

11:00 a.m. "Recent Advances in Thoracic Surgery": George M. Curtis, Columbus.

12:00 m. Conference of Secretaries of Component Societies, Faculty Dining Room, Medical Science Building. (Luncheon Facilities at Medical School).

Panel Discussions

1:30 p.m. "Medical Problems Peculiar to the Aged."
Panel Board: John R. Montague, Portland, Chairman; Homer P. Rush, Portland; Irvin R. Fox, Eugene.

"Management of Acute Cholecystitis."
Panel Board: Thomas M. Joyce, Portland, Chairman; W. B. Holden, Portland; Dean B. Seabrook, Portland.

"Early Syphilis: Its Diagnosis and Treatment."
Panel Board: Alfred H. Illge, Portland, Chairman; Joyle Dahl, Portland; John H. Labadie, Portland.

"Immediate and Delayed Repair of Pelvic Relaxation."
Panel Board: Theodore W. Adams, Portland, Chairman; R. Lindsay McArthur, Portland; G. S. Beardsley, Eugene.

"Selective Service Examinations."
Panel Board: Frank R. Mount, Portland, Chairman; Verden E. Hockett, Lieutenant-Commander, MC-V (G)., U. S. Naval Reserve, State Medical Officer, Selective Service; Lewis N. Adams, Lieutenant, Medical Corp, Portland; Charles O. Sturdevant, Portland; R. Lloyd Tegart, Portland.

3:00 p.m. Recess to Visit Scientific and Technical Exhibits.

3:30 p.m. "Relation of the Surgeon to the State Industrial Accident Commission."
Panel Board: Mr. Ralph E. Jackson, Claim Agent, Oregon State Industrial Accident Commission, Salem, Chairman; James C. Hayes, Medford; H. R. Kaufman, Toledo.

"Physiologic Responses in Anxiety States."
Panel Board: D. C. Burkes, Portland, Chairman; Henry H. Dixon, Portland; Wendell H. Hutchens, Portland; John W. Evans, Portland.

"Fractures of Hip Joint."
Panel Board: Otis F. Akin, Portland, Chairman; Charles R. McClure, Portland; A. Gurney Kimberley, Portland.

"Roentgen Study of Cholecystitis: Its Alteration of Normal Intestinal Gradient."
Panel Board: William Y. Burton, Portland, Chairman; Dorwin L. Palmer, Portland; Sherman E. Rees, Portland.

5:00 p.m. Recess to Visit Scientific and Technical Exhibits.

6:00 p.m. Dinner Meeting, House of Delegates, Heathman Hotel. All members are invited to attend.

Friday, September 5.

7:00 a.m. Breakfast Meeting, House of Delegates, Heathman Hotel. All members are invited to attend.

GENERAL SCIENTIFIC SESSION

Auditorium of Library Building.
Karl H. Martzloff, Portland, or George E. Henton, Portland, Presiding.

8:30 a.m. "Growth Disturbances Produced by Allergy": Milton B. Cohen, Cleveland.

9:30 a.m. "Clinical and Gastroscopic Features of Chronic Gastritis": Henry J. Tumen, Philadelphia.

10:30 a.m. Recess to Visit Scientific and Technical Exhibits.

11:00 a.m. "Recognition and Management of Acute Injury to the Chest": George M. Curtis, Columbus.

12 m. (Luncheon Facilities at Medical School).

3:30 p.m. "Some of the Newer Developments in Medicine and Surgery": Frank H. Lahey, Boston.

4:30 p.m. Business Session and Election of Officers.

6:30 p.m. Annual Banquet (Informal): Hotel Multnomah.
President's Address: Karl H. Martzloff, Portland.
Address, "Medical Problems of Today": Frank H. Lahey, Boston.

CLINICS

Attendance Limited
University of Oregon Medical School Hospitals
1:00-3:00 p.m.

Doernbecher Memoriol Hospitol for Children

Presentation of Cases: J. B. Bilderback, Chief of Staff.

State University Tuberculosis Hospitol

Presentation of Cases: Ralph C. Matson, Associate Clinical Professor.

Multnomoh Hospitol

Clinical Pathologic Conference; Presentation of Autopsies and Cases from the Hospital and the Outpatient Clinic: Frank R. Menne, Professor and Head of the Department of Pathology.

UNIVERSITY MEDICAL SCHOOL

Honoring Dr. Dillehunt. Two hundred and twenty-five members of University of Oregon medical school faculty honored Richard B. Dillehunt, dean, at dinner July 10, in recognition of thirty years service to the school. Highlight of the dinner, held at Portland's University club, was the unveiling of a portrait done by Sydney Bell, noted Portland artist. Dean Dillehunt sat for the portrait at the behest of the faculty and the portrait will be hung over the fireplace in the faculty room of the school's new library.

Dean Dillehunt came to Oregon in 1911. He was assistant dean from 1912 to 1920, becoming dean that year upon the death of K. A. J. Mackenzie. Mackenzie dreamed of a medical center on Marquam hill, in the western heights of Portland, but only one building had been erected at the time of his death. Today a $3,000,000 plant hovers over the city, all built during Dean Dillehunt's administration.

Intern Service. National defense leaves its imprint on the internship system of University of Oregon Medical School. The first training period that follows every student's graduation from medical school will be a one-year rotating service until further notice. Previously rotating service has lasted two years. Cutting of internships is a voluntary action necessitated by the army and navy and the selective service boards decision to recognize only one year internship for deferment.

MEDICAL NOTES

Albany General Hospital has announced the installation of a licensed laboratory. It occupies two rooms and cost approximately $1800.

Administration of Oregon Crippled Children Program has been transferred from the State Public Welfare Commission to University of Oregon Medical School. R. B. Dillehunt, Dean of the Medical School, continues as Medical Director.

Herbert Mason has become associated in practice with his father at Beaverton. He has been appointed Assistant Washington County Health Officer.

O. A. Hess, Portland, has retired as Multnomah County physician, and has been succeeded by Randall F. White, Portland.

OBITUARIES

Dr. Gustav Baar, Portland, died July 6, at the age of 67. The cause of death was hypertensive cardiovascular renal disease.

Dr. Max R. Charlton, Tillamook, died May 31, at the age of 59 years, of carcinoma of the liver.

WOMAN'S AUXILIARY

Annual Meeting, September 4-5, 1941

Thursday, September 4, will open the Sixty-seventh Annual Session of Oregon State Medical Society at Portland.

Auxiliary members will register in the Auditorium of the Medical-Dental Building, S. W. 11th Avenue and Taylor Street.

Plans for the following tentative program are now under way; Dr. Frank H. Lahey of Boston, American Medical Association President, will be guest of honor and speaker at luncheon on Friday, September 5, at Portland Hotel. Karl H. Martzloff, President of Oregon State Medical Society; W. W. Baum, President-elect; Ralph A. Fenton, Trustee of American Medical Association, and John H. Fitzgibbon, Oregon Delegate to the American Medical Association will also be honored at this luncheon.

On Thursday, September 4, at 1 o'clock luncheon at the Waverly Country Club, we will have as our guest, Mrs. Roscoe E. Mosiman of Seattle, President of the National Auxiliary.

On Friday, as usual, we will have breakfast at the Campbell Court Hotel, honoring the founders and past-presidents of the Auxiliary. All auxiliary members are invited and are particularly urged to attend.

On Friday evening, the Auxiliary will join the physicians in the annual banquet at Multnomah Hotel. Saturday morning will be reserved for breakfast and a postconvention board meeting at Campbell Court Hotel. The golf tournament will be held following.

Letters have been sent to State Board members announcing the meeting in the Medical-Dental Auditorium at 11 o'clock on July 31, regarding preconvention plans.

It is also suggested that all Oregon members who can possibly attend the Washington State Auxiliary annual meeting to be held in Seattle on August 24-26, do so.

Please Note. Wives, arriving Tuesday and Wednesday with husbands attending the society meetings and clinics, please register then at the auxiliary headquarters, Medical-Dental Building.

Mrs. Charles Edwin Sears, our State President, was appointed a member of the National Board at the June Convention, held in Cleveland, Ohio.

Evelyn Wall McArthur
Chairman, Press and Publicity

PROGRAM

Thursday, September 4.

10:00 a.m. Registration, Auditorium, Medical-Dental Bldg.
11:00 a.m. Business Meeting.
  Roll Call of Delegates.
  Reading of Minutes.
  Report of Recording Secretary, Mrs. Lawrence R. Serrurier, Portland.
  Communications and Report of Corresponding Secretary, Mrs. E. Merle Taylor, Oswego.
  Report of Treasurer, Mrs. Laurie P. Lind, Portland.
  Report of Auditor, Mrs. George E. Henton, Portland.
  Announcement of Special Committees:
    Resolutions, Registration.
  Reports of State Officers:
    President-elect, Mrs. Charles E. Hunt, Eugene.
    First Vice-President, Mrs. Roy A. Payne, Portland.
    Second Vice-President, Mrs. Donald M. Long, Marshfield.
    Third Vice-President, Mrs. Ralph W. Stearns, Klamath Falls.
    Fourth Vice-President, Mrs. Lee B. Bouvy, La Grande.
  Report of Organization Chairman, Mrs. Roy A. Payne, Portland.
  Reports of Directors:
    Mrs. James M. Odell, The Dalles.
    Mrs. Grover C. Bellinger, Salem.
    Mrs. O. C. Hagmeier, Seaside.
    Mrs. Carl J. Hollingworth, Portland.
  Report of Registration.
  Annual Report of President, Mrs. Charles Edwin Sears, Portland.
1:00 p.m. Luncheon, Waverly Country Club.
    Mrs. Roscoe E. Mosiman, Seattle, Honor Guest.
2:30 p.m. Reports of Standing Committees.
6:30 p.m. No-Host Dinner.

Friday, September 5.

8:30 a.m. Breakfast, Honoring Founders and Past-Presidents, Campbell Court Hotel.
10:00 a.m. Business Meeting, Auditorium Medical-Dental Building.
  Reading of Minutes of Previous Session.
  Reports of County Auxiliaries:
    Benton, Mrs. Waldo W. Ball, Corvallis.
    Clatsop-Tillamook, Mrs. F. W. Rafferty, Astoria.
    Coos-Curry, Mrs. John Keizer, Marshfield.
    Jackson, Mrs. Dwight H. Findley, Medford.
    Josephine, Mrs. C. J. Moser, Grants Pass.
    Klamath-Lake, Mrs. Merle H. Swansen, Klamath Falls.
    Lane, Mrs. C. D. Thompson, Eugene.
    Mid-Columbia, Mrs. Stanley Wells, Hood River.
    Multnomah, Mrs. Charles H. Manlove, Portland.
    Polk-Yamhill-Marion, Mrs. W. W. Baum, Salem.
  Reports of Special Committees:
    Resolutions, Registration, Nominating.
  Election of Officers.
1:00 p. m. Luncheon, Portland Hotel.
  Honor Guests:
    Dr. Frank H. Lahey, President, American Medical Association.
    Dr. Ralph A. Fenton, Trustee, American Medical Association.
    Dr. John H. Fitzgibbon, Delegate to Amedican Medical Association.
    Dr. Karl H. Martzloff, President, Oregon State Medical Society.
    Dr. W. W. Baum, President-elect, Oregon State Medical Society.
  Advisory Committee.
  Address: Dr. Frank H. Lahey.
3:00 p.m. Business Meeting, Auditorium of Medical-Dental Building.
  Final Report of Registration.
  Minutes of Morning Session.
  Installation of Officers.
  Adjournment of Fifteenth Annual Session.
6:30 p.m. Annual Banquet (Informal) with Medical Society, Hotel Multnomah.

Saturday, September 6.

8:30 a.m. Breakfast, Campbell Court Hotel.
  Postconvention Board Meeting.
  Adjournment.
10:30 a.m. Golf Tournament.

WASHINGTON STATE MEDICAL ASSOCIATION

FORTY-SECOND ANNUAL MEETING
AUGUST 25-27

HOUSE OF DELEGATES

MEMBERS FOR 1941
Speaker of House, WILMONT D. READ, *Tacoma*

Society	*Delegate*	*Alternate*
Chelan	John E. Gahringer	Norman T. Bellas
Clallam	L. A. Schueler	W. H. Taylor
Clark	Carl B. Cone	Leslie L. Frewing
Cowlitz	J. F. Christensen	H. D. Fritz
Grays Harbor	M. P. Graham	E. L. Calhoun
Jefferson	C. M. Schaill	H. G. Plut
King	David Metheny	Paul R. Rollins
	F. H. Wanamaker	Armin Rembe
	C. W. Knudson	
	Herbert E. Coe	
	J. Finlay Ramsay	
	Erroll W. Rawson	
	I. A. Weichbrodt	
	B. P. Mullen	
	Roll N. Dillon	
	E. A. Nixon	
	Brien T. King	
	Arthur C. Crookall	
Kitsap	J. T. Coyle	J. E. Haddon
Kittitas	J. O. Mooney	J. Harold Brown
Klickitat	D. V. Ogievsky	Thomas Meade
Lewis	Rush Banks	J. P. McDermott
Lincoln	L. F. Wagner	J. E. Anderson
Okanogan	L. S. Dewey	
Pacific	(Not reporting)	
Pierce	F. R. Maddison	W. C. Cameron
	D. M. Dayton	R. S. Schaeffer
	C. R. McCreery	J. W. Gullikson
	W. H. Goering	C. V. Lundvick
Skagit	W. V. King	R. K. Behrns
Snohomish	A. P. Duryee	O. A. Thomle
Stevens	(Not reporting)	
Spokane	W. H. Tousey	R. N. Hamblen
	A. O. Adams	Arthur Cunningham
	J. M. Nelson	J. E. Cunningham
	Donald Palmer	W. E. Grieve
Thurston-Mason	L. A. Campbell	K. L. Partlow
Walla Walla	W. V. Frick	Morton Tompkins
Whatcom	W. C. Moren	
	J. Reid Morrison	
Whitman	James L. Gilleland	P. G. Weisman
Yakima	Herbert C. Lynch	Henry S. Atwood
	James P. Thompson	W. Shuler Ginn

Note: All Officers and members of Board of Trustees are members of House of Delegates.

The House of Delegates will meet Tuesday, 8:00 a.m., Parlor B, Olympic Hotel; and Wednesday, 3:45 p.m., Parlor A, Olympic Hotel. Speaker Read will preside over the meetings.

ENTERTAINMENT FOR STATE MEETING

ANNUAL GOLF TOURNAMENT

It is estimated by the committee in charge of arrangements that nearly two hundred physicians will enter the Washington State Medical Golf Association's tournament scheduled to be held during the first day of the state association annual meeting, Monday, August 25. The smart golfers are already considering entering the Sunday Grand Sweepstakes as a warm-up for the Monday's big event and also that they may get the feel of the course. Both events will be held at Seattle Golf Club, the Highlands, near Seattle. The course is considered one of the sportiest in the country. There will be plenty of fine and valuable prizes, all of which will be awarded to the winners of the various events in the evening at the annual banquet and election of officers to be held in the club house.

Here's an idea of the course, hole for hole:

Hole	*Yardage*	*Par*
1.	420	4
2.	315	4
3.	340	4
4.	400	4
5.	205	3
6.	390	4
7.	430	4
8.	133	3
9.	496	5
First Nine:	3,129	35
10.	340	4
11.	155	3
12.	365	4
13.	295	4
14.	563	5
15.	423	4
16.	468	5
17.	387	4
18.	488	5
Second Nine:	3,485	38

Add 'em up, you get a total of 6,614 yards with a par for 18 holes of 73. There are two interesting water holes, No. 11 which is a one-shot hole and No. 16 with the tee 200 yards away from the hole with the second shot, if you're in the right frame of mind, over the lake.

The second nine is the toughest with nearly all of the fairways cut through trees; plenty of saplings and big firs which have withstood the temper of the irate who ruined more than one brassie and iron on their bark.

GOLF PROGRAM

Sunday, August 24.

12:00 noon. Tee-off for Grand Sweepstakes, 18 holes on full handicap, Seattle Golf Club. Thirty valuable and useful prizes will be awarded for this event at the no-host dinner in the evening.

6:30 p.m. No-host golf and mixer dinner, Junior Ballroom, Olympic Hotel. Grand Sweepstakes prize awards given at this dinner. Everyone invited. Make reservations for dinner at Registration desk, Spanish Lounge.

Monday, August 25.

Annual Golf Tournament, D. H. Houston, State Chairman
King County Committee: G. R. Ridlon, Chairman; J. N. Wilkinson, G. H. Knowles, W. A. McMahon.

Tee-off time: 7:00 a.m. to 2:30 p.m.

1. Championship and runner-up: 18 holes gross.
2. President Homer D. Dudley Trophy: 36 holes net.
3. Dr. W. A. Taylor Trophy: 36 holes net.
4. Dr. A. A. Strauss Trophy: Seniors, 18 holes net.
5. Shaw Trophy: Four-man Team, intercounty contest.
6. Section Contest. Prizes in every Section: Medicine, Surgery; Orthopedics and Trumatic Surgery; Pediatrics; Obstetrics and Gynecology; X-ray and Physiotherapy; Urology and Dermatology; Eye, Ear, Nose, Throat and Pathology.
7. Class Contests: Class A (0-12); Class B (13-18); Class C (19-24) and Class D (25-30).
   (Note: There will also be other contests and awards).

7:00 p.m. Annual Golf and Fish Derby dinner, Seattle Golf Club. All prize awards—golf and fish derby, will be awarded at the dinner.

MEDICAL NOTES

Fort Lewis Hospitals Nearly Completed. Four separate hospital projects have been under way at Fort Lewis and are nearly completed. They are alterations to the permanent post hospital, a 750 bed cantonment type hospital and a 500 and 400 bed hospital of the same type.

Contract Let for Tacoma Hospital. A Portland firm has been awarded contract for construction of buildings at Cushman Indian Hospital, Tacoma. Total amount involved is $983,000.

Virginia Mason Expands. Virginia Mason Hospital of Seattle is planning to add three stories to its main structure and increase bed capacity from 150 to 200. Nurses' dormitory and other additions on the west wing will be completed this month, following which the addition to the main building will be started.

Federal Funds Sought. County commissioners of Cowlitz County have made application to the PWA for a grant of $36,600 toward construction of the proposed new county hospital.

Official Positions. A. E. Lien, county physician of Spokane County, has been ordered to report for duty with the Navy Medical Corps. Wallace Hunt, health officer of King County, has been replaced by W. W. Schwabland. T. C. Baldwin, county health officer of Kitsap County, has resigned and his work will be taken over by the health unit recently organized by the county, state and city of Bremerton. A. L. Ringle, health officer of Cowlitz County, has resigned to accept a position as regional medical director for the Farm Security Administration in Portland. J. A. Nelson of Longview has been appointed to succeed him. S. P. Lehman has been reappointed health officer of Mason County. R. McC. O'Brien has been appointed county physician and A. D. Schlotthauer health officer for Pend Orielle County.

Miller Portrait Unveiled. Portrait of the late George C. Miller was unveiled at Providence Hospital, Seattle, June 30.

Locations. Robert Maher of King County Hospital, Seattle, has moved to Elma where he will be associated with A. A. Foote. Howard B. Thomas of Swedish Hospital, Seattle, has become associated with Harry H. Kretzler at Edmonds.

Weddings. A. D. Berry of Seattle General Hospital, Seattle, and Miss Ida Wickland were married June 20 shortly before Dr. Berry went on active duty with the Navy. Alex R. MacKay of Spokane and Marjorie Andres, daughter of R. G. Andres, were married July 16. J. W. Neighbor of Mason City and Miss Winifred Wetherill of San Francisco were married June 14.

OBITUARIES

Dr. Caspar Wistar Sharples of Seattle died July 15 of metastasis of carcinoma to the lung. He was 75 years of age, and was born in Eugene, Oregon. His preliminary education was gained at the University of Oregon where he graduated in 1884. Four years later he received his medical degree from University of Pennsylvania School of Medicine, Philadelphia. Following an internship, he came to Seattle July 12, 1890. He was active as a surgeon and community leader for fifty-one years. An operation several years ago returned him to active practice, and he maintained his interest in community and medical society affairs until very shortly before his death.

Dr. Cornelius J. Lynch of Yakima died July 18, aged 67. He was the son of a pioneer family which settled in Lewis County in 1870. The family moved to the Yakima Valley in 1878, and Dr. Lynch received his preliminary education at Yakima and at the State Normal School at Ellensburg. His medical education was received at the Kentucky School of Medicine, Louisville, Ky., where he graduated in 1900. Shortly after graduation he settled in Yakima and practiced there continuously until the time of his death.

Dr. Cleveland Reuben Duncan of Yakima died July 19, aged 56. He had been in the hospital for a month following thrombosis. He was born in Columbus Junction, Iowa, and received his medical degree from the University of Iowa, graduating in 1909. Shortly after graduation he moved to Wapato, Wash., practicing there until he entered the army in the first world war. Following his discharge from the Medical Corps, he moved to Yakima and practiced there since that time.

Dr. Wilbur Nathan Hunt of Burlington died July 20, aged 84. He was born in Newport, New Hampshire, and received his medical degree from Drake University College of Medicine, Des Moines, Iowa, in 1888. He practiced in Bellingham from 1900 until 1909 when he moved to Burlington. He continued his service in that city until his retirement several years ago.

FACTS CONCERNING INSULIN

At present insulin is manufactured and distributed by Lilly, Sharp & Dohme and Squibb.

Cost of glands used in manufacture of insulin has increased 60 per cent since 1925 and 30 per cent since 1931. Despite this increase, improvements in costs of manufacturing methods have reduced the total cost of manufacturing the product 30 per cent since 1931. Squibb says that, during the same period, when manufacturing costs were being reduced 30 per cent, the selling price of insulin was reduced 75 per cent. The present low cost to the diabetic emphasizes the competitive conditions in the insulin field. The 1940 losses and low percentage of profit over the last ten years reveal there has been no profit, since research and promotion of the product have consumed a disproportionate amount of time.

The product itself has been substantially improved over the original unmodified insulin sold in 1925 and with the addition of protamine zinc insulin in 1937 and of zinc insulin crystals in 1938, other forms of insulin offering further advantages are being marketed. The last two improved products mean that a dose of insulin will last a diabetic for a much greater period of time than formerly.

IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, JUNE 23-27, 1942

IDAHO STATE MEDICAL ASSOCIATION

PROCEEDINGS OF THE FORTY-NINTH ANNUAL MEETING OF IDAHO STATE MEDICAL ASSOCIATION, SUN VALLEY, JUNE 18-21, 1941.

HOUSE OF DELEGATES

First Session

June 17, 8:00 p.m.

The meeting was called to order by President A. M. Newton.

The following certified delegates were present: A. M. Newton, Pocatello; P. M. Ellis, Wallace; W. W. Beck, Blackfoot; F. B. Jeppesen, Boise; W. O. Clark, Lewiston; W. B. Handford, Caldwell; G. O. A. Kellogg, Nampa; Everett Jones, Boise; A. M. Popma, Boise; Alex. Barclay, Jr., Coeur d'Alene; W. F. Passer, Twin Falls; G. C. Halley, Twin Falls; Glenn McCaffery, Kellogg; D. C. Ray, Pocatello; C. W. Pond, Pocatello; A. P. Pappenhagen, Orofino; R. T. Scott, Lewiston.

Minutes of the 1940 meeting were read and approved.

PRESIDENT'S ADDRESS

REVIEW OF URGENT MEDICAL PROBLEMS

A. M. Newton, M.D.

POCATELLO, IDA.

We are at this time in a state of undeclared war. What the ultimate effect of this war will be upon our economic, political and professional lives, no one can foresee. From the political trend of the last few years it is reasonable to suppose that we will drift much farther toward socialized medicine. The federal agencies that are medical or have any kind of medical set-up are gradually extending their service and influence.

The F. S. A. may be taken as an example. There is a well-arranged plan under the name of a national defense program to extend certain kinds of medical, surgical and dental care along with training in hygiene to those youths in need of, and unable to pay for, such services. There could be no objections to this program, if it were limited to the financially needy, and if it could be done without political favor. It will be interesting to watch this movement and the results obtained. As to the plan for medical care of F. S. A. groups established in this state, so far as I have been able to determine it, is not satisfactory to the doctors, and in most instances they have discontinued the agreement with the F.S.A.

These problems of socialized medicine are national in scope and will need to be handled by a national organization that is efficiently organized and well financed. The N.P.C. is well-prepared to carry on the fight against further socialization of medicine. I sincerely believe that every doctor should give substantial financial aid to the National Physicians Committee and thereby increase its effectiveness.

The South Side Society at Twin Falls recently initiated a movement to interest the component societies in a basic science law. Through the office of our secretary a letter was sent to each society in the state and a request made to bring this matter to the attention of its members. It is to be hoped that this has been done and the subject given the consideration it deserves.

At the present time sixteen states have a basic science law. The law provides that all who wish to practice the healing art must take and pass successfully a written examination in the subjects required. These subjects in most of the states having a basic science law are anatomy, physiology, pathology, bacteriology and chemistry. The professions covered are physicians and surgeons, osteopaths and chiropractors. Those already licensed in the professions are exempt from the examination. There is one provision that must be a part of the law to make it effective, and that is that none of the professions are to be represented on the board. The bill should provide that members of the examining board should be selected from a list of competent instructors teaching in the state university. After a candidate has successfully passed in the subjects required by the basic science law, he is then permitted to take the examination of his professional board.

A bulletin from the bureau of legal medicine and legislation of the A.M.A. has this to say of the basic science law: "It ignores all medical dogmas and cults, establishes an impartial board of examiners. It has been effective in weeding out the unfit as combined figures from all the states having a basic science law show that 12 per cent of the medical students and doctors taking the examination failed; of the osteopaths 41 per cent failed, and of the chiropractors 74 per cent."

The chairman of the committee on National Affairs of the Osteopathic Association has this to say of a proposed basic science law: "The Basic Science Bill is the most difficult legislation that has ever confronted our profession; for it appeals to disinterested minds and seems absolutely fair to all concerned. No telling arguments in opposition have yet been produced." The father of chiropractors, B. J. Palmer, made the following statement: "Chiropractic is doomed. You have drifted so far from the basic principles of chiropractic that you lost your identity and brought the basic science bill on your heads. Twenty-eight chiropractic schools have closed recently and others will follow. You cannot defeat the ends of science. The basic science bills are the brickbat which we deserve for trespassing. When chiropractors preach and practice and try to become physicians, then it is justifiable for the medical men to educate the chiropractors."

The basic science law has been sustained by the courts in all the states where its constitutionality has been questioned. It is to be hoped that the House of Delegates at this session will pass a resolution favorable to this proposed legislation, and that every doctor will take an active interest in the passage of such a bill. If we undertake this piece of legislation, we must not fail.

Organization for the next meeting of the legislature should start this year. There should be three or four doctors selected for candidates for the next legislature. Financial aid should be given these men in their campaign, if necessary, as we well know that any man of the medical fraternity who becomes a candidate for public office makes a great financial sacrifice. To conduct any campaign such as proposed requires a financial sacrifice. It also requires a financial reserve by the society. It would, therefore, be in order to suggest that the society start this year to earmark funds for use by the legislative committee for the next meeting of the legislature. A comprehensive and workable plan should be formulated by August or September of 1942. A sufficient financial reserve should be on hand by that time to amply provide for all necessary expenses. This procedure can justly be urged, because in the past no well-arranged plan well in advance for legislative work has been accomplished and no financial preparation made.

We went into the last legislature with our finances at a very low ebb, but fortunately, through the efficient work of the legislative committee and a few other doctors, legislative bills detrimental to our interests were defeated. For many years our state society has taken the defensive on legislative matters. I can see no good reason why, at the next meeting of the legislature we should not make a determined stand for a bill that will impose some very definite educational qualifications on all who wish to practice the healing art in this state.

Through the bureau of legal medicine and legislation of the American Medical Association a well-prepared and effective basic science law can be obtained. It would be advisable for the council to select and pass upon such a bill and then through the office of the secretary have it sent to the component societies for their study and approval.

For a number of years this society has had a cancer committee. In some instances there has been some commendable work done along the line of educational propaganda. We have contributed money on several occasions to help carry on this educational work. In my opinion it is fair to say that the society as a body has shown very little interest in the cancer work throughout the state. I feel that, while we are contributing comparatively little money to the work on cancer, we are not getting value received for what has been donated. This is not a criticism of the few who have been earnestly doing all that could be done with the funds available, but is a criticism of the society as a whole.

I should like to see this organization, before this meeting is concluded, develop and accept a plan which would extend several years into the future. In this plan let us arrange to give the cancer committee united support, more financial aid, more help in our local communities in the organization of the county units, and see that more carefully prepared talks are given before clubs and civic organizations. I should like to see in the near future one well organized and equipped cancer clinic centrally located in the state. The society could well afford to set aside a sum of money each year toward the equipment of such a clinic. Individual members could with some earnest effort interest philanthropic citizens in making contributions or endowments. It is possible that some counties and the state health department could be interested in giving financial support. That this will take time, money, and continued effort I fully realize, but it can be accomplished.

I believe there is a great need for such an institution in this state, not so much for the patients who have the means to go where they may desire for diagnosis and treatment, but for those whose funds are limited and those patients who have no funds. Each of us sees some patients every year who need radium or roentgen treatment for carcinoma who cannot afford to travel to a distant out-of-the-state clinic. In many of these cases life could be prolonged and made more comfortable. With many more a cure could be effected. There is no question but that, if a well organized plan for cancer education and treatment were instituted in this state, the doctors would become more cancer conscious and some lives could be saved by an earlier diagnosis being made. I believe that in a few years we could have a well equipped and recognized clinic. I also believe that there are a large number of philanthropic individuals in our state who would gladly donate to such a worthy cause.

On May 10 of this year the committee appointed to cooperate with the manager of the State Insurance Fund met in Boise at the request of the manager of the fund, Mr. O'Meara, for the purpose of formulating a new fee bill. As you know, the present fee bill was arranged and adopted in 1926 and is not sufficiently comprehensive; also, there are many new operative procedures for injuries that have been developed in the past fifteen years. It has often been difficult for the office of the State Insurance manager to make satisfactory adjustments of bills presented by the doctors for work done where the particular case was not covered in the fee bill.

The fee bill that has recently been arranged by the committee and other doctors to represent the different specialties provides for as liberal payment as other fee schedules in the Northwest states. Considerable time was devoted to the work and an earnest effort was made to arrange a fee schedule that is fair to the fund and the doctors as well. There were types of treatment, especially electrotherapy, that have been extensively used by some to the financial detriment of the fund, and very little or no good to the patient. It is astounding, judging from some bills presented, how valuable a few doctors and osteopaths consider diathermy as a curative agent. It is to be desired that every doctor in the state will understand that the office of the State Insurance Fund manager wishes to deal fairly with the doctors, and in return has a right to expect conscientious and judicious management of accident cases coming under his care.

The committee appointed to cooperate with the Insurance Fund manager is to act as a consulting committee in some cases, pass upon bills where there is a question of excessive or overcharge, and give opinions on films where there is a difference of opinion, this service to be rendered when it is desired by the insurance manager. Where the work is in the nature of a consultation by any member of the committee, it is assumed the regular fee will be allowed. However, for much of the work there would be no fee asked or offered. The members of this committee, you can be assured, will act with all fairness on any case presented to any one of them or as a group on any case or cases presented. It is understood that, where any case involving the matter of a fee is to be considered, the case is presented by number with no names appearing.

The utmost care should be used by doctors in giving testimony at board hearings, that the findings in the case are the result of a careful and thorough examination and that the evidence given is understandable and unprejudiced. Too often the testimony given by doctors for plaintiff and defendant is conflicting, and as a result all the medical testimony is either given scant consideration or disregarded entirely.

The time is coming in this state, and must come, when the insurance carriers will insist that injured employees be sent to the doctors best qualified to care for the more disabling injuries. Unless the doctor and all connected with the State Insurance Fund perform their obligations faithfully, efficiently and honestly, we will undoubtedly see a tremendous increase in premiums in the period following the present war. The Insurance Fund Committee should do everything possible to influence and educate doctors, innocently or otherwise, who are out of line in the matter of fees charged. This committee should have the unqualified support of every member of the state society. Raiding of the fund by a few individual doctors should be stopped, and I want also to say that there is no place for political patronage in the handling of the State Innsurance Fund.

At this time I wish to express my appreciation of the honor that you have conferred upon me. The work of the past year has given me a broader understanding of what the society is doing and can do for the medical men of the state. It is my sincere hope that every doctor in the state can become fully aroused to the medical problems that confront us at this time and made to realize that our state society is the most effective agent for the solution of these problems.

COMMITTEE REPORTS

Report of Public Relations Committee

Activities of the Public Relations Committee during the past year were not strenuous. The Committee did, however, examine and approve the following informative pamphlet of the Idaho Division of Public Health: "Standing Orders for Public Health Nurses, Idaho Division of Public Health" (September, 1940). The Committee also aided the Women's Field Army of the American Society for the Control of Cancer by supplying speakers on the control of malignant disease to broadcast over Stations KIDO and KFXD, and to speak to various civic and social organizations in Boise and vicinity. The following members of the Idaho State Medical Association cooperated in this speaking program: A. M. Popma, C. H. Sprague, Howard Chaloupka, J. L. Stewart, S. M. Poindexter, Ralph Jones and T. N. Braxtan.

R. S. Smith,
Chairman

Legislative Committee

A report from the chairman of the Legislative Committee, James L. Stewart, was read.

Medical Preparedness Committee

A report from the chairman of the Medical Preparedness Committee, F. M. Cole, was read.

State Insurance Commission Committee

A report from the committee designated to confer with the State Insurance Commission and the Industrial Accident Board was made by Dr. Kellogg.

Fee Bill Revision Committee

The subject of revising the present fee bill was discussed. The question of whether or not this committee should act as a mediator in questionable fee bills was discussed. It was voted that this be done.

Committee Appointments

Dr. Newton appointed a nominating committee consisting of W. B. Handford, C. W. Pond and R. T. Scott. A Resolutions Committee was appointed consisting of D. C. Ray, W. O. Clark, H. C. Halley, Alexander Barclay, Jr. and Glenn McCaffery.

SECOND SESSION

June 18, 7:30 a.m.

The meeting was called to order by President A. M. Newton.

The following certified delegates were present: A. M. Newton, Pocatello; P. M. Ellis, Wallace; F. B. Jeppesen, Boise; W. W. Beck, Blackfoot; W. O. Clark, Lewiston; W. B. Handford, Caldwell; G. O. A. Kellogg, Nampa; Everett Jones, Boise; L. E. Jewell, Meridian; S. M. Poindexter, Boise; J. L. Stewart, Boise; A. M. Popma, Boise; Alex. Barclay, Jr., Coeur d'Alene; C. B. Beymer, Twin Falls; W. C. Smail, Jerome; G. C. Halley, Twin Falls; F. W. Durose, Bonners Ferry; W. R. West, Idaho Falls; Glenn McCaffery, Kellogg; H. B. Rigby, Rexburg; R. P. Howard, Pocatello; C. W. Pond, Pocatello; A. P. Pappenhagen, Orofino, R. T. Scott, Lewiston.

Financial Report of Secretary-Treasurer

The financial report of the secretary-treasurer was read. It was voted that this report be accepted.

TOTAL MEDICAL POPULATION			1940, 397; 1941, 394
TOTAL PAID MEMBERSHIP			1940, 298; 1941, 279
Total who actually paid dues			237
Honoraries			27
Army			15
			279
RECEIPTS			
General Fund Dues		$ 2,366.00	
Local Society Dues		316.00	
Northwest Medicine Dues		468.00	
Commercial Exhibits		210.00	
Sale of Desk		10.00	
			$ 3,370.00
Previous Balance		$ 800.00	
Less Expenses of Previous Secretary paid from the above:			
Graves & Potter	$11.00		
Times & News	4.25		
Twin Falls Bank (Overdraft)	79.90	95.15	704.85
Total Cash to account for			$ 4,074.85
DISBURSEMENTS			
Refunds to Local Societies		$ 334.00	
Northwest Medicine		295.00	
Legal and Auditing		150.00	
Office Expense		202.39	
Printing and Stationery		100.37	
Salaries		190.00	
Telephone and Telegraph		40.80	
Travel Expenses		241.10	
Legislative Expenses		225.91	
Committee Expense		12.75	
Convention Expense		49.65	
Total Disbursements			$ 1,841.97
Balance Cash on Hand			$ 2,232.88
BALANCE SHEET			
ASSETS			
Cash on Hand		$ 2,232.88	
Postal Savings Bonds (Par value $15,000)		11,250.00	
Office Equipment	$244.25		
Less Depreciation	80.50		
Prior years		163.70	
Total Assets			$13,646.58
LIABILITIES, RESERVES AND SURPLUS			
Local Societies		$ 251.00	
Idaho Medical Foundation		11,250.00	
Northwest Medicine		173.00	
Total Liabilities and Reserves			$11,674.00
SURPLUS			
Balance 11-1-40		$ 624.80	
Less Payments on Prior Accounts		15.25	
		$ 609.55	
Add Excess of Earnings over Expense		1,363.03	
			1,972.58
Total Liabilities, Reserves and Surplus			$13,646.58

Report of Cancer Committee

About two months ago, Dr. Howard, who so ably served for many years, resigned both his chairmanship and membership in this committee. President Newton asked me to assume the chairmanship during the remainder of the term of service. The work, therefore, has been a continuation of the program outlined by Dr. Howard.

The work of the cancer committee during the past year has been twofold: (1) advisory, (2) educational.

In its educational capacity, the committee has served to provide physician speakers to lay groups on cancer. The committee members themselves have given much time to present many of their talks. They are gratified for the cooperation of the various members of the association who have helped in this educational work. During the past year over fifty talks on cancer were given by physicians to lay groups throughout the state. In addition ten radio talks were given over Idaho stations. The majority of the meetings were under the auspices of the Women's Field Army.

As an advisory board the cancer committee has supervised the work and activities of the Women's Field Army. The Chairman of your committee automatically becomes the state chairman of the executive committee of the Women's Field Army. All cancer publicity and educational work done by the field army is under the direct supervision of the cancer committee. Literature is approved before dissemination to the laity, newspaper articles read before publication and advice given to lay speakers. An honest attempt is being made by the committee to present facts and education without commercial "ballyhoo."

Last year your state association appropriated $300 to be used by the Field Army in its educational campaign. This money has been used to purchase and distribute literature dealing with early diagnosis and proper treatment of cancer. Over 20,000 pieces of literature were distributed throughout the state. In addition a movie film, "Choose to Live," was purchased which was shown fifty-four times in twenty-five communities. All of the educational activities have been directed toward early diagnosis and the avoidance of cancer quacks.

The Committee's gratitude is extended to the State Department of Health which under Dr. Berry has assisted financially and otherwise in this program.

As regards future activities of the committee, these are dependent on the wish of members of the association. The committee feels that continued supervision of and cooperation with the Women's Field Army is imperative. The committee, therefore, respectfully requests financial support as during the past year. Cooperation with the State Department of Health and Law Enforcement to abolish cancer quacks from the state would be a worthwhile project.

During the past few years there has been an increasing murmur among the laity for the establishment of a cancer clinic in this state. The committee feels that at this time neither the medical profession nor the public is in need of such an institution. However, in the event that such a clinic should be established in the next few years, it would be well to lay the basis for plans in order to retain the control within our organized profession.

A. M. Popma,
Chairman

RESOLUTIONS

1. Basic Science Law

Resolved: That a proper Basic Science Law, conforming to the standards of the American Medical Association, be prepared and presented to the next legislature; that a committee be appointed by the President of the Medical Association to contact the Board of Education, officers of the State University and its branches, and other sources of information, in order to receive help and advice pertinent to the formulation of a Basic Science Board.

2. Cancer Clinic

Resolved: That the president appoint a committee to study the feasibility of establishing a centrally located clinic for diagnosis and treatment of cancer in indigent patients. This committee will be authorized to study the probable cost of equipment and personnel for such a clinic, and look into ways and means for securing the necessary funds for its maintenance.

3. Women's Field Army

Resolved: That continued financial support be given toward the furtherance of the work of the Women's Field Army.

4. Recognition of Medical Legislators

Resolved: That the association take proper cognizance of the work done in behalf of our association during the recent meeting of the State Legislature by those men in our society who were themselves members of the Legislature, including Drs. Robins, Shinnick and McCabe, and others who have contributed their time and effort in this work.

5. Liquid Fund

Resolved: That a liquid fund of at least $1,000 be laid aside in the next two years to be used for emergencies at the discretion of the Council.

6. Thanks to Dr. Pond

Resolved: That the House of Delegates extend to Dr. Pond a vote of thanks for his excellent work in preparing our programs for the past three years.

7. Compensation to Secretary

Resolved: That, in view of the outstanding services rendered by Dr. Jeppesen during the past year, it is the recommendation of this committee that a sum of $150 be voted him in partial payment of his work as Secretary.

8. Appreciation to Women's Auxiliary

Resolved: That our hearty appreciation be given to the Woman's Auxiliary for their continued and untiring help towards our interests.

9. Increased Deduction for Sickness and Accidents

(Introduced by C. A. Robbins of St. Maries)

Whereas: New discoveries and advances in medical science have been marked in the past twenty years, requiring more extensive and elaborate equipment both by the hospitals and physicians handling contract work and,

Whereas: The costs of hospitalization, including housing, board, laundry, drugs, dressings, nursing, etc., have advanced over this period so that all hospitals have found it necessary to advance their rates for private patients, in most instances from seventy-five per cent to one hundred fifty per cent, and

Whereas: During this same period of time the call for medical and surgical care for nonindustrial accidents has increased over five hundred per cent, due to the increase in the use of the automobile, and

Whereas: In most adjoining states the monthly hospital deduction for sickness and nonindustrial accidents has been advanced in proportion to the increased costs of supplying modern scientific medical and hospital care, and

Whereas: Prepayment medical care plans which are nationally known such as the California State Medical Society plan, the Hugh Cabot plan, etc., require from $2.50 to $3.50 per month and several thousand subscribers are necessary to make these rates feasible, and,

Whereas: There has been no increase in Idaho in the amount of deductions for sickness and nonindustrial injuries; the rate of $1.00 per month which is now operative is the same rate which has been in force for over twenty years; in most instances, the employer makes a monthly payment to cover industrial accidents, which rate varies from fifty cents to sixty-two and one-half cents per man per month, therefore be it

Resolved: That the House of Delegates of Idaho State Medical Association assembled recommends that the present deduction of $1.00 per month for sickness and nonindustrial accidents be increased to $1.50 per month, to which the employed will add 50 per cent, or 75 cents per month for industrial accidents, and, be it further

Resolved: That a committee be appointed by the President of this Association to personally interview the members of the Industrial Accident Board and respectfully ask their permission that the above deductions be made.

All above resolutions were voted on and carried.

Report of Nominating Committee

President-Elect	G. O. A. Kellogg, Nampa
Secretary-Treasurer	F. B. Jeppesen, Boise
Councilor	C. B. Beymer, Twin Falls

The above nominations were accepted unanimously by the House of Delegates.

Meeting Place

After much discussion it was decided that the meeting place for the Idaho State Medical Association for next year would be Sun Valley.

Molpractice Defense

Dr. Clark discussed the advisability of having a committee formed within Idaho State Medical Association for the purpose of preventing malpractice suits and to defend those doctors who might be sued. Dr. Kellogg suggested that the Council act as this committee but after some discussion it was decided best to have a separate committee. It was moved by Kellogg and seconded by Dunn that the president appoint such a committee.

MEETING OF COUNCIL

June 21, 12:30 p.m.

PROGRAM FOR 1942 MEETING

Sun Valley was agreed upon by the House of Delegates as our next meeting place and the time was set by the Council at June 23-27, 1942. The University of Oregon Medical School will be invited to put on our next program.

Committee Appointments

The following committees were apointed by the president:

Program Committee

H. L. Stowe, Twin Falls,
 Chairman.
Everett Jones, Boise.
C. W. Pond, Pocatello.
P. M. Ellis, Wallace.
F. B. Jeppesen, Boise.

Arrangements Committee

S. Poindexter, Boise,
 Chairman.
E. J. Fitzgerald, Wallace.
W. B. Ross, Nampa.
R. T. Scott, Lewiston.

Industrial Medicine

E. N. Roberts, Pocatello,
 Chairman.
L. J. Stauffer, Priest River.
W. B. Handford, Caldwell.
R. T. Hopkins, Orofino.
Glenn McCaffery, Kellogg.

Legislation

J. L. Stewart, Boise,
 Chairman.
C. A. Robins, St. Maries.
R. T. Hopkins, Orofino.
D. C. Ray, Pocatello.
J. D. Shinnick, Grangeville.

Scientific Exhibits

Glenn McCaffery, Kellogg,
 Chairman.
A. M. Popma, Boise.
H. L. Schiess, Shelley.
R. S. McKeen, Boise.
E. V. Simison, Pocatello.

Public Relations

R. S. Smith, Boise,
 Chairman.
Elizabeth Curtis, Weiser.
W. S. Douglas, Lewiston.

Maternal Welfare

Elizabeth Curtis, Weiser,
 Chairman.
H. E. Dedman, Boise.
F. W. Durose, Bonners Ferry.

Cancer

A. M. Popma, Boise,
 Chairman
A. M. Newton, Pocatello.
R. T. Scott, Lewiston.

Anti-Tuberculosis

O. F. Swindell, Boise,
 Chairman.
Alex. Barclay, Jr.,
 Coeur d'Alene.
C. H. Sprague, Boise.

National Defense

F. M. Cole, Caldwell.

Insurance Board

A. M. Newton, Pocatello,
 Chairman.
F. M. Cole, Caldwell.
M. T. Smith, Wallace.
G. O. A. Kellogg, Nampa.
W. R. Abbott, Idaho Falls.

F. B. JEPPESEN,
Secretary

MEDICAL NOTES

IDAHO STANDS FIRST. According to the June issue of *Briefs*, published by Maternity Center Association, New York, Idaho had the lowest maternity mortality rate recorded for any state during 1939, it being 22 per thousand per live births. North Dakota and Oregon were close seconds, with rates of 24 each, followed by Connecticut 26, Wisconsin 28, Minnesota and South Dakota with 29.

HOSPITAL BONDS TO BE VOTED. Commissioners of Twin Falls County have decided to submit to voters a proposed $250,000 bond issue for expansion of the Twin Falls County General Hospital facilities.

GOLDEN JUBILEE. Providence Hospital at Wallace celebrated its 50th anniversary July 2. Cornerstone was laid July 2, 1891. First patients were admitted a few months later.

AIR BASE HOSPITAL COMPLETED. Hospital at Boise air base was recently completed and turned over to the Medical Corps. One hundred beds have been provided and the hospital will be able to expand to 150 beds if necessary.

JOSEPH R. NUMBERS has moved to Boise from Weiser.

WOMAN'S AUXILIARY

See p. 14 Advertising Section

CLINICAL FORUM

OBSTETRIC PROBLEM

The patient, a white female, age 20, gravida one, presented herself for obstetric care December 4, 1940.

Ob. History: First day of last menstruation was October 27, 1940; she felt life February 9, 1941; consequently, she would be at term August 3, 1941, even though she felt life at about three and a half months. Nausea and vomiting were mild and she reacted well to the usual treatment. Nothing but very minor complaints occurred during the course of gestation.

The family history was negative except that she was one of seven children, having five brothers and one younger sister. Medical and surgical history entirely negative.

Menstrual History: Menses began at 15; were regular every twenty-eight days, duration six days; moderate in amount with some pain on the first day only.

Physical Examination: Weight at first examination 155½ lb., height 5 ft. 7 in.; B. P. 120/70. General physical examination including Wassermann was negative. Vaginal examination revealed a very thick and rigid perineum, long narrow vagina, long hard infantile type of cervix and uterus in good position. Presence of pregnancy doubtful. Arch of symphsis was low and of a decidedly obtuse angle. No abnormal secretions present.

Pelvic Measurements: Sp. I 26½; Cr. I 28; Bi-Troch. 33; Baud. 20; C. D. 12.

Progress During Pregnancy: This patient's course during pregnancy was uneventful. She gained weight up to 173½ lb., less than 20 lb.; blood pressure was constantly around 120/80 and her urine entirely normal.

July 13 at 1:30 a.m. patient had her first pains but they were very weak and two hours apart until 8:30 a.m., when they became hard and regular every eight to ten minutes apart. The patient had started labor three weeks before estimated term and she stated that the membranes had ruptured twenty-four to thirty-six hours previously.

Examination showed the position and presentation was O. L. P. Estimated size of babe was 8 lb. There was absolutely no engagement; fetal heart tones good; cervix effaced and dilated about 2 cm.

During the next twelve to fourteen hours pains varied somewhat in intensity and frequency, being very hard and almost continuous at times, but with never any signs of progress.

How should she be managed?

COMMENTS ON PEDIATRIC PROBLEM PRESENTED IN JULY

The pediatric problem presented last month directs one's attention to the cerebrospinal system. The history, examination and recorded observation of the child makes one consider tuberculous meningitis. Also, the fact that some two months previously she had had an acute illness uninfluenced by chemotherapy suggests the possibility of entrance of a tuberculous infection. Then a latent period, followed by a definite meningial irritability, emphasizes that possibility. On the other hand, a blood count of 21,000, a poly. count of 89 per cent, and a negative Mantoux seem to be consistent in indication of some other organism being present than the tubercle bacillus.

In conducting this case other blood counts should be made and another Mantoux; also further study and cultures of the spinal fluid, chemotherapy, may be tried. General condition must be supported by ample fluids and food; forced feeding, if necessary.

The first commentator offers these views:

The history, physical signs and laboratory data suggest a diagnosis of tuberculosis meningitis. This disease has its highest incidence during the second year of life. The insidious onset, increasing irritability, loss of appetite, low grade fever and listlessness are all characteristic. The neurologic signs and spinal fluid changes are practically confirmatory in spite of the absence of tubercle bacilli and the negative Mantoux test. This latter was done in a dilution of 1:10,000. It is possible that a 1:500 or 1:100 concentration would have reacted positively. However, the allergic response to tuberculin tends to diminish or become absent during the terminal phases of tuberculous meningitis. The mother "has been unwell intermittently for several years and is now undergoing bed care." This, of course, suggests that she has tuberculosis and is the source of the child's infection. In the light of our present knowledge tuberculosis meningitis yields to no treatment and constitutes a fatal disease. Symptomatic treatment and care of this little patient is all that can be offered.

Every case of tuberculosis presents a challenge to the physician and it is mandatory that all contacts be examined with a view to ascertaining, first, the source of the patient's infection and, second, the possible discovery of other cases in the family. Both parents, other children, relatives and nurse maids should be carefully examined.

The two weeks of fever during her convalescence from diphtheria remain unexplained. There is no evidence that there was any connection between the two illnesses. Continued search for organisms in the spinal fluid would more than likely reveal the tubercle bacillus. Guinea pig inoculation with spinal fluid would be the logical procedure.

The second commentator expresses these opinions:

The most likely diagnosis was probably tuberculous meningitis as a part of a miliary tuberculosis acquired from a tuberculous mother. To be sure, the tuberculin test was negative but this is often true in miliary tuberculosis.

The spinal fluid examination deserves special comment. The cell count and differential count on the spinal fluid are compatible with a diagnosis of tuberculous meningitis but might also be present in poliomyelitis, encephalitis lethargica and neurosyphilis. However, the sugar is reduced to 22 mg. per 100 cc. which occurs in tuberculous meningitis and not usually in poliomyelitis, encephalitis lethargica or neurosyphilis.

In addition, pellicle formation in the fluid was reported and this in itself in this type of fluid is strongly suggestive of tuberculous meningitis. Notice must be taken of the absence of tubercle bacilli on staining and the negative culture. Tubercle bacilli are often difficult to find in the fluid in these cases; a larger percentage of positives will result, if the pellicle itself is stained. Guinea pig inoculation might have proved positive but not likely until after the patient would have died, had tuberculous meningitis been present.

Additional studies to be made in this case include a chest roentgenogram to confirm or rule out miliary tuberculosis of the lungs, repetition of the tuberculin test every other day with gradually increasing doses of tuberculin until a positive test is obtained or a maximum of 5 mg. of tuberculin is injected, and estimation of the spinal fluid chlorides which are usually lower in tuberculous meningitis than in the other conditions likely to be present here.

In the event of the confirmation of the diagnosis considered most likely, symptomatic treatment is indicated in view of the almost 100 per cent mortality of the disease. This would include a quiet, darkened room, analgesics for headache, mild sedation, supplying of easily assimilated diet and fluids. Spinal puncture relieves the symptoms temporarily but offers no prospect of cure and only prolongs the illness. The outlook is for a fatal outcome in from one to three weeks.

Third commentator says:

The data presented in this case would suggest a meningoencephalitis with multiple cerebral abscesses. The prognosis is bad. The only finding inconsistent with this diagnosis is the lymphocytosis in the spinal fluid. The possibility of tuberculosis should be investigated with a stronger tuberculin test. A chest roentgenogram might demonstrate miliary tuberculosis in the absence of a positive mantoux. The possibility of a local abscess might be investigated with a cerebrospinal air study.

Conclusion of case:

At the time of consultation a presumptive diagnosis of tuberculous meningitis was made. A search for acid-fast organism in the spinal fluid was instituted and on the second day after admission these were demonstrated. General supportive measures were carried out. The child became gradually weaker and more comatose and died on the seventh hospital day.

BOOK REVIEWS

The Chinese Way in Medicine. By Edward H. Hume, M.D. 189 pp., $2.25. The Johns Hopkins Press, Baltimore, 1940.

By reason of many years residence in China, living with the Chinese people, wearing their dress and speaking their language, the author of this book is especially fitted to impart information concerning Chinese medical beliefs and practice. He states that ancestor worship is unquestionably the most potent force holding Chinese to traditional ways. After death, when he becomes a spirit, the ancestor possesses undefined but vast powers which continue permanently as an influence over succeeding generations.

This book presents curious and fascinating descriptions of drug therapy, incantations, exorcisms and apparently mysterious and senseless therapeutic measures which seemed nevertheless to produce results. We are apt to flatter ourselves that modern medical men have been the original discoverers of the most important medical knowledge and procedures, yet we are informed that Chang Chung-Ching, sometimes called the Hippocrates of China, mayor of Changsha in A. D. 196, was author of one of the most important medical classics of China, an "Essay on Typhoid and Miscellaneous Diseases" that filled sixteen volumes. In the second century A. D. Hua T'o was the celebrated surgeon of the day. His chief claim to fame rested on his discovery of the use of anesthetics. He gave his patients an effervescing powder in wine "which produced such numbness and insensibility that he could open abdomen or back, as the case might be, and wash, cut or remove diseased organs."

The modern Chinese physician employs methods whose principles accord with the accepted procedures. His four cardinal steps in diagnosis are look, listen, inquire, feel the pulse. His medicinal equipment consists largely of herbs whose qualities have been tested during previous generations. Naturally, we cannot accept incantations and efforts to dispel hostile spirits. If one is interested in curious developments of medical knowledge, he will find satisfaction in this volume.

The Heart in Pregnancy and the Child-Bearing Age. By Burton E. Hamilton, M.D., Cardiologist since 1921 to The Boston Lying-In Hospital, and K. Jefferson Thomson, M.D., Associate Physician, Metropolitan Life Insurance Company Sanatorium, Mount Gregor, N. Y., etc. With a section entitled "Delivery and Obstetrical After-Care of Cardiacs" by Frederick C. Irving, M.D., F.A.C.S. Professor of Obstetrics, Harvard Medical School, etc. 402 pp. $5. Little, Brown & Co., Boston, 1941.

This volume is divided into three separate books. Book 1 deals with classification, care, prognosis, and treatment of the cardiac patient in pregnancy and the puerperium. Since congestive heart failure is either the sole or contributing cause of two-thirds of the fatalities during and following pregnancy, this symptom-complex is discussed in detail. One point worth repeating is, "congestive heart failure seldom occurs for the first time at or following delivery." A plea is made for less surgical interference in the pregnant cardiac.

Book II covers the physiology of circulation in normal pregnancy and in the pregnant woman with cardiac disease. Book III discusses the various heart diseases in pregnancy and the child bearing age. This includes eclampsia, hypertension, nephritis, congenital defects and disturbances of metabolism. One long chapter is devoted to rheumatic heart disease and another to cardiac neuroses. Since few good books have been published on heart disease in pregnance, this volume should be invaluable to the obstetrician, internist, general practitioner and all others who share in the responsibility of these patients. A. G. Friend.

Oral Pathology. A Histological, Roentgenological and Clinical Study of the Diseases of the Teeth, Jaws and Mouth. By Burt H. Thoma, D.M.D., Professor of Oral Surgery, and Charles A. Brackett, Professor of Oral Pathology, Harvard University. With 1370 Illustrations including 317 in color. 1306 pp. $15. The C. V. Mosby Co., St. Louis, 1941.

The opening chapter of this book deals with hereditary influences in anomalies of teeth and jaws. It is a resumé of the recent literature relative to the inheritance factor in malrelation of teeth and jaws. Considerable space is devoted to endocrinology and nutritional influences.

Under Developmental Anomalies of Dentition the discussion of resorbtion of the permanent teeth is instructive and enlightening. The chapter, Pathologic Effects of Dental Restorations, should receive the careful study of every dental practitioner. Herein, the authors clearly picture the regressive changes that may result from excessive sacrifice of tooth structure and by means of colored sections demonstrate the irritation produced from the use of various filling materials.

Oral manifestations of virus and oral diseases, essentially local in character, are comprehensively and adequately covered. The text embraces physiological or functional, morphological, special and comparative pathology. It is a pathological and clinical symposium compiled for the busy practitioner with limited time and a limited library. Illustrations are profuse, beautiful and clear, adding much to the context. L. L. Foote.

The Essentials of Applied Medical Laboratory Technic. Details of How to Build and Conduct an Office or Small Hospital Laboratory at Small Cost. By J. M. Feder, M.D., Director of Laboratories and Allergic Service, Anderson County Hospital, Anderson, S. C. Blood and Plasma Transfusion by John Elliott, ScD., Pathologist Rowan General Hospital, Salisbury, N. C. Profusely illustrated, two plates in color. 241 pp., $5.00. Charlotte Medical Press, Charlotte, N. C., 1940.

This volume may not find its way to many laboratories in large metropolitan hospitals with staffs of highly trained technicians. It will, however, prove to be a gold mine for the small hospital or the doctor who wishes to set up his own little laboratory. It would be of great aid to the office nurse who is trying to help her employer by doing some laboratory work.

This volume has been stripped of everything which is not practical and to the point. It is quite obvious that the writer has recognized and solved a multitude of the problems of the small laboratory. Directions and diagrams are such that an assistant with little technical training might do much of the work. Sketches and photographs are used in profusion. From description of a simple laboratory bench to blood and plasma transfusion, allergy tests and elements of tissue diagnosis the book covers the necessary field directly and without frills. It is well worth its modest cost.

For the local Treatment of Acute Anterior **Urethritis**

(DUE TO NEISSERIA GONORRHEAE)

SILVER PICRATE*
Wyeth

Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae.[1] An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

A complete technique of treatment and literature will be sent upon request

■

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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For Diseases of the Chest

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Established by private endowment, Riverton Sanatorium is operated on a nonprofit basis.
The recently erected fifty bed hospital building is equipped for modern methods of diagnosis, medical and surgical treatment of chest diseases.
Steam-heated cottages, each with private bath, provide additional accommodations.
The facilities of the institution are available to physicians who wish to use them for the care of their private patients.

PLAY FOR CONVALESCENT CHILDREN IN HOSPITALS AND AT HOME. By Anne Marie Smith, Staff Instructor, Leaders' Training School, Community Recreation Service, Chicago, Illinois. 133 pp., $1.60. A. S. Barnes and Company, New York, 1941.

This book is intended for those interested in the welfare of children, and to illustrate what play has accomplished in changing children's fears of hospital and giving them greater confidence in their physicians and nurses. A story, a game or song may divert the child's mind from mental and emotional stress, as well as depleting effects of pain, and conserve his energy for regaining of physical health. After discussing the value of traditional play activities, the author describes organization and administration of the department of play, with illustrations of their application. There is a classification of tested forms of play, with descriptions of their uses during bed confinement and subsequent convalescence. Here are assembled many useful suggestions for relieving the hours of children's illness.

PROCTOLOGY FOR THE GENERAL PRACTITIONER. By Frederick C. Smith, M.D., M.Sc., (Med.); F. A. P. S., Formerly Associate in Proctology, Graduate School of Medicine, University of Pennsylvania, etc. Illustrated with 161 half-tones and line engravings and five color plates. Second Revised Edition. 466 pp., $4.50. F. A. Davis Company, Philadelphia, 1941.

It often seems odd that an author addressing himself to general practitioners of medicine should indulge in a long dissertation on embryology and anatomy. This book devotes a fifth of its pages to such discussion quite useless to the busy physician who probably reads only the chapter which applies directly to the case uppermost in his mind at the moment. Aside from this bit of inefficiency, which is common to many, the text is an excellent reference work. Language is clear and directions are explicit. Methods of examination and treatment are described in a manner which leaves no chance for mistake. Ample warning of pitfalls is given, even to a warning about operating room conversation while a patient is under local anaesthetic. The author discusses all the usual rectal diseases and also includes such allied conditions as pilonidal cyst, parasitic infestations, wounds and foreign bodies. The work is thoroughly modern, and it is so helpful that no general practitioner who does any rectal work whatever should omit it from his own working reference library.

THE 1940 YEAR BOOK OF PHYSICAL THERAPY. Edited by Richard Kovacs, M.D., Professor and Director of Physical Therapy, New York Polyclinic Medical School and Hospital, etc. 464 pp. $2.50. The Year Book Publishers, Chicago, 1941.

During the last two decades physical therapy has developed into a specialty in medical practice and is employed to a greater or less extent by all practitioners. A few physicians have mastered its technic and employ it intelligently, while a very large proportion apply it in a hit-and-miss fashion, being unfamiliar with the principles involved. The editor of this volume is widely known for his proficiency in physical therapy. A special article is presented by him on "Physical Therapy in Chronic Arthritis."

The book is about equally divided between physical therapy methods and applied physical therapy. Under Part I are discussed the principles employed in thermotherapy, electrotherapy, light therapy, hydrotherapy, mechanical therapy and other applications. Everyone employing these forms of treatment should be familiar with their basic principles so that they can be used intelligently. Part II describes the various forms of diseases in which physical therapy methods may be used with advantage. There are brief considerations of cardiovascular, respiratory, abdominal, arthritic, traumatic, orthopedic, neurologic and other conditions in which this form of treatment may be of service. Any physician employing these measures should ascertain why and how they should be used.

THE PHARMACOLOGY OF ANESTHETIC DRUGS. A Syllabus for Students and Clinicians. By John Adriani, M.D., Instructor in Anesthesia, New York University College of Medicine, etc. Second Edition. 74 pp., $3.50. Charles C. Thomas, Springfield, Illinois, 1941.

This volume of thirteen chapters is devoted to a diagramatic description of fundamental principles of the physiology of anesthesia, in addition to chemical consideration of anesthetic agents and pertinent clinical considerations. The book is well indexed and contains an accurate bibliography. It offers excellent ready reference regarding anesthetic problems, at the same time acting as a textbook for those interested in self-instruction in anesthesia.

It presents an accessible source of information for any problem of anesthesia, whether desired by the specialist or general practitioner. D. N. HOPPER

FOUNDATIONS OF NEUROPSYCHIATRY. By Stanley Cobb, A.B., M.D., Bullard Professor of Neuropathology, Harvard Medical School, etc. Second Revised and Enlarged Edition. 231 pp., $2.50. The William & Wilkins Co., Baltimore, 1941.

This book is for the practitioner and student, and is intended to present the basis for understanding the simpler workings of the nervous system. An attempt is made to correlate the anatomy, physiology and pathology of the nervous system without entering too much into the clinical field. The style is somewhat rambling and presents a simplified version of the author's personal reflections on the subject. F. LEMERE

INTRODUCTION TO PSYCHOBIOLOGY AND PSYCHIATRY. A Textbook for Nurses. By Esther Loring Richards, M.D., Sc.D., Associate Professor of Psychiatry, Johns Hopkins University, etc. 357 pp., $2.50. C. V. Mosby Co., St. Louis, 1941.

This is a new book intended for nurses but might be interesting to physicians concerned especially with psychobiology. The first part takes up normal behavior and the personality study, including its many ramifications of growth, sex, family and interpersonal relationships. The second part discusses the various abnormal reaction types included in the field of psychiatry. F. LEMERE

THE AVITAMINOSES. The Chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases. By Walter H. Eddy, Ph.D., Professor of Physiological Chemistry, Teachers College, Columbia University, etc., and Gilbert Dalldorf, M.D., Pathologist to the Grasslands and Northern Westchester Hospitals, Westchester County, N. Y. Second Edition. 519 pp., $4.50. The Williams & Wilkins Company, Baltimore, 1941.

This book of about 500 pages gives a review of the intensely interesting and the rapidly expanding subject of avitaminoses. In a subject of such wide distribution, of such varied implications and with such rapidly extending horizons, it is impossible to follow the literature and keep up to date. This volume is an up-to-date review and a ready desk reference. C. F. DAVIDSON.

NORTHWEST MEDICINE

JOURNAL OF OREGON STATE MEDICAL SOCIETY, WASHINGTON STATE MEDICAL ASSOCIATION
AND IDAHO STATE MEDICAL ASSOCIATION
ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION
Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879.
Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 8, 1917, authorized July 31, 1918.

Vol. 40, No. 9 SEPTEMBER, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

APPRECIATION OF MEDICAL OFFICIALS

Meetings of the state associations in the summer and early fall months again call to mind the great amount of time and effort devoted to our organizations by the few individuals in official positions. Officers of the local and state organizations spend endless time in meetings, where matters of the most vital concern to the profession are considered, while members of committees labor long and diligently to the end that the organizations function smoothly toward their purpose. Yet many, less unselfish, pass off all this effort on the behalf of others with sneering remarks about medical politicians.

An example of the exacting requirements of some of these official positions and the generous way in which the men in question devote an undue proportion of their time and abilities is provided by the director of medical defense for the Ninth Corps Area. This work, now so vitally important for the nation and indirectly (as can some day be told) to the medical profession, is being done by John O'Shea of Spokane. Already contributing much as a member of the House of Delegates of the A. M. A. and also as one of the five men composing the Judicial Council (to which by virtue of his abilities he was recently named for the second time) he has given very largely of his time in defense work.

During the past year he has been obliged to make no less than five trips to Washington and Chicago on defense matters alone with consequent loss of time from his own work which would not be tolerated by many. The effort put forth by directors of medical defense for the entire country will no doubt result in benefits to all of us for years to come, yet will probably be appreciated by only a few.

Dr. O'Shea is indeed not the only one who might be cited for large contribution to the welfare of the profession. The list is long of officers and committeemen who have served capably. His work is brought to attention only as an example of the often poorly appreciated efforts of those in responsible positions.

UNJUST DISCRIMINATION

Not long ago a company located in a coast city found that it should add to its force of approximately two hundred fifty office workers. It interviewed a number of applicants and among others selected, as qualified, a young lady of considerable personality and ability. This girl is a serious individual who has done exceptionally well in previous positions and who would have been a valuable addition to the office force of the company in question. She has every characteristic which makes for success in an organization of this size yet she did not get the job.

When the personnel department went over her records they found that her mother had had tuberculosis. The medical director of the company went to the mother's physician for information. He found that the patient had been under care for a number of years but did not at present have a positive sputum. He was told that the girl in question had been followed carefully from early childhood by means of roentgenograms which had always been negative. He found that both mother and daughter understood tuberculosis fully and were more than usually careful in all matters of health. He was assured that the girl was in all likelihood a far better risk, from the standpoint of tuberculosis, than the average individual who knew nothing of the rules of health understood by every one familiar with that disease. Nevertheless the girl was refused employment on that basis alone.

Such ignorance and prejudice are inexcusable. Had the girl herself been a victim of tuberculosis with recovery, the discrimination would have been worthy of criticism. Certainly those who labor so wholeheartedly in our sanatoria to return tuberculous patients to health and a useful place in the community would be most discouraged, if their graduates were thus condemned in all offices. But to carry this prejudice and misunderstanding to the second generation and reject one who has never had the disease displays a pitiful lack of understanding.

The fact that such incomprehension still exists is a sad commentary on the efforts of intelligent medical men to educate the public. Such bias might well discourage those who try to show what tuberculosis really is and where the danger really lies. Considering the perseverance of that long misunderstood group, however, it will probably only serve as a stimulus to further effort. The general medical profession should fulfill its duty as guardian of the health of the public and help in the much needed educative process.

SATISFACTORY ANNUAL MEETING

The annual meeting of Washington State Medical Association, held in Seattle last month, presented some features that were somewhat unusual, but proved satisfactory to those in attendance. There was a record registration of 706, of whom 250 came from cities other than Seattle. There were fifteen from states other than Washington. The program committee decided to feature a program confined entirely to members of the State Association, a plan which has not been attempted for several years. It has become an almost universal custom for a state meeting program committee to secure speakers from out of state for part of or for the entire program. At times the desirability has been advocated of limiting scientific papers to members of the organization at this annual meeting, since in nearly all the states during the year are scheduled postgraduate individual lectures or courses. The experiment last month was generally considered a success. The attendance was good at both morning programs where papers were presented.

The system of panel discussions for the afternoon programs was introduced for the first time, two panels being conducted on different subjects at the same time. Each of these assembled a large, attentive and appreciative audience. The subjects considered were ordinary, everyday ailments, coming under the observation and treatment of every practitioner. An opportunity for free discussion of such subjects presents possibilities of value and profit to everyone who wishes to attend. It is believed that this plan of free discussions will be adopted as a permanent feature of the annual meeting.

An attractive feature of the meeting was the concentration of registration desk, commercial and scientific exhibits in spacious quarters, with the assembly room on the floor below. This facilitated attendance at programs, also social contacts which were found very satisfactory. As each registered he was given a slip listing the commercial exhibitors, with spaces for signatures. As he visited and signed the attendance card at each exhibit, the attendant in turn signed the exhibitor's slip. Later a drawing was held for prizes contributed by exhibitors. This procedure was an attraction to the exhibitors and served to bring them and the doctors in closer relation. These features, together with the golf tournament, fishing derby and annual dinner, rounded out a meeting of the Association which was declared most satisfactory and memorable.

PRIMARY CARCINOMA OF THE LIVER

Primary carcinoma of the liver is the rarest form of malignancy affecting Europeans, but very common among most pigmented races, according to Berman[1] of Johannesburg. He says that among the Bantu it is the most frequent type of cancer, being responsible for 90.5 per cent of all cases coming under his observation. On account of the infrequency of this condition the pathology of primary liver cancer as found in European and American textbooks is neither satisfactory nor adequate. Consequently the author presents a description of the pathology of primary liver cancer based on postmortem findings in fifty-four cases which he has studied.

It is stated that the average weight of the normal European liver is 1500 Gm., the average of the Bantu liver being 1750 Gm. Accurate weighing of forty-two cases of Bantu cancerous livers gave an average of 3925 Gm., with a minimum of 1900 and maximum of 7100 Gm. The right lobe is the most common site of involvement, being attacked in nineteen cases, with only one confined to the left lobe, thirty-four cases having both lobes involved. A description is given of nodular and massive carcinoma, under one of which each case is classified, nodular including thirty-four, with twenty grouped as massive. Density, deformity and irregularity appear under both classifications, extraordinary size being the attribute of the massive group. Description is made of fibrotic changes, the color including white, gray, yellow and red. Many details are presented pertaining to cellular and intercellular conditions.

Metastases outside the liver were noted in thirty-one cases, the lungs being most frequently involved, accounting for twenty-seven of the total number. Most abdominal organs are included as sites of metastases. The author discusses the initial origin of primary liver cancer, two views being formulated, that of multicentric and unicentric origin. The former theory claims a simultaneous or successive appearance of independent foci through the liver. The other holds that there is only one primary focus within the liver, other intrahepatic tumors being due to spread from the original growth. The author states from his own experience that in most cases the primary growth in the liver can be readily distinguished, occupying a conspicuous position amidst the varying number of smaller nodules. From his experience he has been led to favor the unicentric origin of this condition.

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1. Berman C.: Pathology of Primary Carcinoma of Liver in Bantu Races of South Africa. South African J. Med. Sc. 6:11-25, April, 1941.

ORIGINAL ARTICLES

CLINICAL USE OF SULFONAMIDE COMPOUNDS IN PROPHYLAXIS AND TREATMENT OF INFECTIONS*

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The extensive investigations of Marshall and his associates[1,2] have demonstrated most clearly that the rational use of sulfonamide compounds calls for a knowledge of the factors concerned with their absorption, distribution and excretion from the body, and the possible toxic effects which they may produce. It quickly became evident that successful therapy with sulfanilamide depended upon the maintenance of certain concentrations of the drug in the blood of the patient under treatment. Later, with the introduction of sulfapyridine, sulfathiazole, sulfaguanidine[3,4] and sulfadiazine (2 sulfanilamidopyrimidine[5,6]), and with the discovery that they presented different patterns in respect to their passage through the body from those of sulfanilamide, it has become necessary for the physician to possess a sound knowledge of the clinical pharmacology of these compounds, if he expects to obtain the greatest measure of therapeutic success from their use. The problem as to which one of these compounds it is best to employ in a given infection is a real one. Hence, it is imperative when using these compounds to know of their behaviour in the body and to have the latest information regarding their comparative effectiveness in disease, types of data which can be based only upon extensive experimental investigations and sound clinical observations.

More is known about the fate of sulfanilamide in the human body than of any of the other compounds. This drug when administered by the oral route is well absorbed from the gastrointestinal tract, is fairly equally distributed throughout the body tissues, and if kidney function is normal is promptly excreted. The maintenance of adequate concentrations of sulfanilamide requires a dosage schedule that is on a four-hour basis. Sulfanilamide may be applied locally without danger of producing damage to the tissues. The drug, when used in this manner, is absorbed quite rapidly. For example, following the implantation of 5 grams of sulfanilamide in the rectus muscle, peak blood concentrations were noted within eight hours, and practically all of the drug was excreted within thirty-six hours. Thus, when sulfanilamide is used locally, one can expect the local effect to be maintained for not much longer than eighteen to twenty-four hours.

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*From the Department of Preventive Medicine, The Johns Hopkins University, and the Medical Clinic of the Johns Hopkins Hospital, Baltimore.

*Read before Annual Meeting of Pacific Northwest Medical Association, Spokane, Wash., June 25-28, 1941.

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2. Idem: Renal Excretion of Sulfanilamide, J. Pharmacol. & Exper. Therap., 6:191-195, Oct., 1937.
3. Marshall, E. K., Jr., Bratton, A. C., White, H. J., and Litchfield, J. T.: Sulfanilylguanidine: Chemotherapeutic Agent for Intestinal Infections, Bull. Johns Hopkins Hosp., 67:163-188, Sept., 1940.
4. Marshall, E. K., Jr., Bratton, A. C., Edwards, L. B. and Walker E.: Sulfanilylguanidine—Treatment of Acute Bacillary Dysentery in Children, Bull. Johns Hopkins Hosp,. 68:94-111, Jan., 1941.
5. Roblin, R. O., Jr., Williams, J. H., Winek, P. S. and English, J. P.: Chemotherapy: Some Sulfanilamido Heterocycles, J. Am. Chem. Soc. 62:2002-2005, Aug., 1940.
6. Feinstone, W. H., Williams, R. D., Wolff, R. T., Huntington, E. and Crossley, M. L.: Toxicity, Absorption and Chemotherapeutic Activity of 2-Sulfanilamidopyrimidine (Sulfadiazine) Bull. Johns Hopkins Hosp., 67:427-456, Dec., 1940.

Sulfapyridine is irregularly absorbed by different individuals, and in the same individual the degree of absorption of this drug from the gastrointestinal tract may vary markedly from day to day. As far as information is available, the drug is fairly well distributed throughout the tissues, and as a general rule it is conjugated to the therapeutically inactive acetyl derivative in a much higher degree than is either sulfanilamide or sulfathiazole. From data available at the present time it seems that the liver plays the predominant role in the conjugation of sulfanilamide and its derivatives. Sulfapyridine is excreted more slowly than is sulfanilamide or sulfathiazole and in the urine a high percentage of the excreted drug is generally present in the acetylated form. This conjugated fraction is poorly soluble and tends to crystalize out in the urine. Little is known about the absorption or excretion of sulfapyridine when the drug is used locally. In animals the drug is absorbed more slowly from the local focus than is sulfanilamide, and its excretion following a single dose is not complete for at least seventy-two hours.

Sulfathiazole is readily absorbed, and when kidney function is normal is rapidly excreted. It is conjugated by the tissues in about the same degree as has been noted for sulfanilamide. Data, which have been obtained from the administration of the drug in patients whose kidney function is depressed and in whom the rate of excretion of the drug is decreased, tend to show that, if sulfathiazole remains in the body for any considerable period of time, its rate of conjugation tends to increase rapidly. This suggests that the reason why sulfathiazole does not ordinarily seem to be converted in large amounts to the acetyl form is that the drug usually is excreted so rapidly that the conjugating mechanism in the liver does not have time to play its ordinary role. The drug is excreted almost entirely by the kidney, and in the urine definitely less sulfathiazole is found in the acetylated form than is the case with sulfapyridine, again, probably, because the drug is excreted so rapidly. This rapid excretion makes it difficult at times to maintain adequate concentrations of sulfathiazole in the blood.

There is little information regarding the distribution of sulfathiazole in the tissues of the body. It is known that it does not penetrate the red blood cells with the same ease as does sulfanilamide or sulfadiazine, and it passes over much less readily into the spinal fluid than do sulfanilamide, sulfapyridine or sulfadiazine. Following the implantation of 5 grams of the drug locally into the rectus muscle, peak concentrations of the drug are noted in the blood in about twelve to sixteen hours, following which there is a gradual fall in the concentration in the blood with detectable amounts still being present at the end of seventy-two hours. It has been noted in animals that the tissues at the site of implantation of sulfathiazole may present a gelatinous appearance (as a result, probably, of the exudation of tissue fluid) for two or three days after the drug has been administered.

Sulfaguanidine introduces a new concept in bacterial chemotherapy, namely, that a drug given *per os* can be quite soluble in the stool, while at the same time its absorption from the gastrointestinal tract is limited. In patients total daily doses of sulfaguanidine up to 0.4 gram per kilo have been given with resulting concentrations of the free drug in the blood of from 2 to 5 mg. per cent. Reports of high blood concentrations of the drug should be regarded with suspicion, and the determination rechecked. Sulfaguanidine, apparently, is fairly well distributed through the tissues and is conjugated only to a moderate degree. That which is absorbed is excreted almost entirely in the urine, in which it exists as the free drug and the conjugated compound.

Sulfadiazine is moderately well absorbed by most patients when it is administered by the peroral route, although its absorption is, as a rule, less rapid and complete than that of sulfanilamide or sulfathiazole. In our experience, following the administration of single doses of the drug, maximal concentrations in the blood were noted between the sixth and eighth hours. The administration of an initial dose of 4.0 grams of sulfadiazine to seventeen adult patients ill with pneumonia resulted in a median blood concentration of less than 1 mg. per cent in 1 hour, and slightly over 2 mg. per cent in four hours. What sulfadiazine is absorbed, is excreted mainly by the kidneys. Its rate of excretion is slower than that of sulfanilamide or sulfathiazole and resembles that of sulfapyridine.

In the urine about one-third of the drug exists in the acetylated form. Because of this slower rate of excretion, it is easier to maintain adequate blood levels with this drug than it is with either sulfapyridine or sulfathiazole. Another factor of considerable importance is that acetylsulfadiazine is quite readily excreted by the kidneys. Therefore, unless kidney damage is present, very little conjugated drug is found in the blood. We have noted that even in the face of considerable kidney damage, the free and conjugated fractions of sulfadiazine seem to be more readily excreted by the damaged kidney than would have been expected, were we dealing with sulfanilamide, sulfapyridine or sulfathiazole.

Up to the present, little is known regarding the distribution of sulfadiazine in the tissues. Our impression is that it is not as evenly distributed as is sulfanilamide. Reinhold and his associates[7] have observed that sulfadiazine penetrates the red blood cells quite readily. Our observations show that the drug appears in the spinal fluid in from three-fourths to nine-tenths of the concentration existing at the same time in the blood. It passes over fairly well into pleural exudates. When sulfadiazine is implanted locally in the rectus muscle, it is absorbed slowly, and its concentration in the blood is rarely greater than 1 or 2 mg. per cent. In our experience at least five days were required following the local implantation of 5.0 grams of the drug in the rectus muscle before it completely disappeared from the blood, and it was noted in the urine in small amounts for as long as a week.

At the present time the sodium salts of sulfapyridine, sulfathiazole and sulfadiazine are available for therapeutic use. For parenteral administration, these compounds should be made up in 5 per cent solutions in distilled water, *and should always be administered by the intravenous route.* It is neither necessary nor advisable to sterilize the solutions by boiling or autoclaving. Immediately after these compounds pass into the blood stream, the sodium ion is split off, releasing either sulfapyridine, sulfathiazole or sulfadiazine as the case may be. From this point on these drugs behave in the tissues in a manner comparable to that noted when they are administered by the peroral route.

In selection of the drug for treatment of a given infection it is of the greatest importance that the correct etiologic diagnosis of the disease process be made by bacteriologic cultural methods. However, it is our firm opinion that one should never hesitate to employ these chemotherapeutic agents, if he feels that, upon the basis of clinical diagnosis, an infection is present which is known to respond to sulfanilamide or its derivatives. The early use of these chemotherapeutic agents in the treatment of susceptible infections is of paramount importance, if prompt, clear cut, clinical results are to be obtained. It is our belief that when one is faced with an acute infection, every effort should be made to bring that infection under therapeutic control within the first forty-eight hours. This requires adequate and intensive therapy. Recently, on the basis of experimental and clinical observations, we have attempted to list the drug of choice in the treatment of certain disease processes. We realize full well that there will be a definite disagreement on the part of some physicians concerning our evaluation of the clinical effectiveness of these drugs.

A question that frequently arises prior to the prescription of sulfanilamide or its derivatives to a given patient is, "*Will an existing anemia, leukopenia, hepatitis or nephritis be aggravated by therapy with these drugs?*" The answer is "*no*" unless the patient is one of those unfortunates who is going to suffer from one or the other of the unpredictable toxic reactions of these drugs. We have repeatedly stressed this point because we feel that the only contraindication to the use of these drugs is that the patient has previously had one of them and has suffered from a toxic reaction to it. For this reason the physician must always ask a patient whether or not he has taken one of these drugs previously, and if he has, whether he suffered a toxic reaction from it. If such a history is elicited, it is best to give a small test dose of the drug (0.15 to 0.3 gram) and then observe the patient for acute toxic manifestations over a period of twelve hours before beginning the course of therapy. If none is observed, treatment may be cautiously begun and continued, a constant watch being kept for possible toxic manifestations.

In table 1 we have attempted to compare the clinical therapeutic efficiency of the various sulfonamide compounds used in the treatment of bacterial infections. At the present time, evidence has accumulated which shows that sulfadiazine is a highly effective agent in the treatment of hemolytic streptococcal infections produced by organisms

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[7] Reinhold, J. G., Flippin, H. E., Schwartz, L. and Domm, A. H.: Absorption, Distribution, and Excretion of 2-Sulfanilamido Pyrimidine (Sulfapyrimidine, Sulfadiazine) in man, Am. J. M. Sci., 201:106-114, Jan., 1941.

Table 1

ESTIMATE OF COMPARATIVE CLINICAL VALUE OF ORALLY ADMINISTERED SULFANILAMIDE, SULFAPYRIDINE, SULFATHIAZOLE, SULFADIAZINE OR SULFAGUANIDINE IN TREATMENT OF INFECTIONS

Disease	*Sulfanilamide*	*Sulfadiazine*	*Sulfapyridine*	*Sulfathiazole*	*Sulfaguanidine*
Hemolytic Streptococcal Infections					
Tonsillitis and Pharyngitis	***	****	**	*	
Peritonsillar Abscess	***	****	**	*	
Ludwig's Angina	****	***	**	*	
Acute Sinusitis	***	****	**	*	
Otitis Media	***	****	**	*	
Mastoiditis	***	****	**	*	
Meningitis	****	***	**	o	
Erysipelas	***	****	**	*	
Scarlet Fever	***	****	**	*	
Adenitis	***	****	**	*	
Cellulitis	***	****	**	*	
Pneumonia	***	****	**	*	
Empyema	***	****	**	*	
Peritonitis	***	****	**	*	
Puerperal Sepsis	****	***	**	*	
Septicemia	****	***	**	*	
Osteomyelitis	***	****	**	*	
Ulcers	***	****	**	*	
Impetigo	***	****	**	*	
Miscellaneous	***	****	**	*	
Viridans Strpetococcal Infections					
Abscess	**		**	*	
Osteomyelitis	**		**	*	
Endocarditis	*	*	*	*	
Meningitis	**		****	o	
Septicemia	**		**		
Non-Hemolytic Streptococcal Infections					
Anaerobic Streptococcal Infections	o	o	o	o	
Pneumococcal Infections					
Pneumonia	*	****	**	***	
Meningitis	*		****	o	
Peritonitis	*		****	***	
Otitis Media	*	****	**	**	
Mastoiditis	*	****	**	**	
Sinusitis	*	****	**	**	
Meningococcal Infections	****	***	***	**	
Brucella Infections	**		**	**	
Gonococcal Infections					
Male Gonorrhea	*	**	***	****	
Female Gonorrhea	***		**	****	
Vulvo-vaginitis	**		**	**	
Arthritis	*		***	****	
Endocarditis	***		****		
Ophthalmia	***		****	****	
Staphylococcal Infections					
Sepsis	*	***	**	****	
Pneumonia	*	***	**	****	
Carbuncle	*	***	**	****	
Meningitis	*	***	**	**	
Endocarditis	*				
Osteomyelitis		***	**	****	
E. Coli Tissue Infections	**	***	**	****	
Chancroid	****		***		
Typhoid Fever	o	o	o	o	
Paratyphoid Fever	o		o		
Gas Gangrene	**		o	**	
Tularemia	o		o	o	
Tuberculosis	o		o	o	
Influenzal Meningitis	*		**		
Friedlander's Infections	*	****	***	**	
Bacillary Dysentery				**	****
Urinary Tract Infections					
E. coli	***		**	****	
A. aerogenes	**	****	**	**	
B. pyocyaneous	o		o	****	
Proteus	****			***	
Enterococcal	o	o	o	o	
Staphylococcal	*		*	****	
Group B. Hem. Strept	**		**		
Actinomycosis	**		**		
Trachoma	****		****		
Ulcerative Colitis	o			*	*
Malaria	o	o	o	o	
Rocky Mountain Spotted Fever	o				
Trichomonas	o				
Lupus Erythematosus	*		*	*	
Phemphigus	*		*	*	
Dermatitis Herpetiformis			*	*	
Virus Diseases					
Lymphogranuloma Venereum	****		****		
Common Colds	o	o	o	o	
Influenza	o	o	o	o	
Poliomyelitis	o		o		
Small Pox	o		o		
Rheumatic Fever	o	o	o		

**** = Preferred Drug
*** = Second Choice
** = Active
* = Minor Activity
o = Should not be used
Blank = Insufficient Data for Evaluation

belonging to Lancefield's Group A. Certainly this is true for mild and moderate infections, but while we have had excellent results in the treatment of a few patients severely ill with hemolytic streptococcal infections, we do not feel that as yet we are completely justified in abandoning the use of sulfanilamide in severe infections. Hence, at the present time one may say that sulfadiazine and sulfanilamide are equally effective in the clinical therapy of hemolytic streptococcal infections but that, because of its lesser toxicity, sulfadiazine is generally the drug of choice. On the basis of present data, sulfanilamide is the preferred drug in treatment of chancroid, gas gangrene, lymphogranuloma venereum, meningococcal infections, trachoma and urinary tract infections due either to B. proteus or Lancefield Group B hemolytic streptococci.

It is to be noted at this point that the use of sulfanilamide in the treatment of gonococcal infections is not recommended. This is based on the observations made by numerous workers during the past two years that sulfapyridine and sulfathiazole are definitely superior. Sulfapyridine, therefore, is an effective agent in the treatment of gonococcal infections, certain pneumococcal infections, and, because it passes readily into the spinal fluid, in staphylococcal meningitis.

There can be little doubt that sulfathiazole is the drug of choice in most staphylococcal infections. In the pneumococcal infections, sulfathiazole has been the drug of choice, but during the past year enough information has accumulated to show that sulfadiazine, when properly used, is as effective in the therapy of pneumococcal pneumonia and produces less toxic reactions than does sulfathiazole or sulfapyridine. For this reason we prefer to use sulfadiazine in treatment of pneumococcal pneumonia, pneumococcal otitis media and pneumococcal sinusitis. In pneumococcal meningitis, sulfapyridine (because more is known of its clinical effects) is still the drug of choice. Sulfathiazole seems to be as effective in male gonorrhea as is sulfapyridine. From both experimental and clinical points of view sulfathiazole appears to be an effective drug in treatment of colon bacillary infections of the tissues, such as peritonitis, pyelonephritis. In certain urinary tract infections it seems to be of considerable value.

Sulfaguanidine shows great promise of being an effective chemotherapeutic agent in treatment of bacillary dysentery. At the present time the following dosage schedule seems to give good results. Initial dose, 0.1 gram per kilo of body weight, followed by 0.05 gram per kilo every four hours day and night until the stools are five or less per day; then 0.1 gram per kilo is given q. 8 hours day and night for at least five days, and, preferably, until the stools have become normal and the stool cultures are negative for dysentery bacilli.

At this point it is important to remember that the rational and reasonable use of these drugs calls for more thought than just their correct prescription. One must not neglect the patient himself while treating a given infection, and all measures of proven value should be employed when indicated. Of considerable importance is the proper use of surgical procedures when such are advisable. This is especially true in the treatment of complications of pneumonia, such as empyema, purulent arthritis, drainage of abscesses occurring in the course of hemolytic streptococcal infections, and especially incision of purulent foci when sulfathiazole is being prescribed in staphylococcal infections.

It has seemed to us that since the introduction of sulfathiazole and sulfadiazine possibly a little too much stress has been laid upon the chemotherapeutic activity of this drug in the therapy of staphylococcal infections. On several occasions we have seen individuals suffering from a staphylococcal bacteremia, in whom administration of the drug brought about a prompt clearing of the blood stream and signs of considerable improvement in the patient. However, in these patients the temperature and pulse did not come down to normal, and in hope that further administration of the drug would bring about the desired effect, therapy was kept up over a period of weeks without complete recovery. Finally, sulfathiazole was stopped, and in each instance hidden and masked foci of infection began slowly to make their appearance. In all instances multiple surgical procedures were necessary before the patient recovered. These experiences lead us to believe that it is unwise to continue sulfathiazole over periods of weeks in staphylococcal infections unless there is *definite clinical evidence that the patient is constantly improving.*

The question of how much fluid should be given to patients who are receiving sulfanilamide or its derivatives is frequently of considerable importance. We have noted repeatedly patients in whom, despite apparently adequate doses of sulfanilamide, it seemed difficult to establish therapeutically active concentrations of sulfanilamide in the blood. In each instance it was found that the patients were receiving such large quantities (4,500 to 7,000 cc.) of fluids each day that the drug was being excreted almost as rapidly as it was being absorbed. Hence, when patients are receiving sulfanilamide it is rarely necessary to force fluids beyond 3,500 cc. per day.

When sulfapyridine or sulfathiazole is being given to a patient, the administration of adequate amounts of fluids is a prime necessity. This results from the fact that in concentrated urines precipitation of acetyl sulfapyridine or acetyl sulfathiazole is more likely to occur and, hence, there is a greater possibility of renal calculi being formed. Therefore, in patients who are receiving either of these drugs, *the urine output should be kept at 1,000 cc. or more per day.*

Certain curious beliefs have grown up concerning diets for patients who are receiving sulfanilamide or its derivatives. Eggs, for instance, are said to be dangerous because of their sulphur content, and because of the possibility that additions of sulphur will facilitate the production of sulphemoglobin. It is sufficient to say that there are no data available to believe that such a superstition has any foundation in fact. It is probably a good thing to maintain an adequate vitamin intake in patients who are acutely or chronically ill with an infection and who are receiving one or the other of these drugs. We recommend that all such patients receive the following amount of vitamin each day during the course of their illness: vitamin A, 6,000 international units; thiamine chloride, 3 mg.; riboflavin, 3 mg.; nicotinic acid, 50 mg.; ascorbic acid, 100 mg.; vitamin D, 100 to 200 international units.

Also, so far as we know, there are no contraindications to the concurrent administration of other necessary drugs, provided that there are definite indications for such prescriptions. There is little reason to believe at the present time that administration of saline laxatives to patients who are receiving sulfanilamide is a factor in the production of either methemoglobin or sulphemoglobin. The possible exception to this statement is the use of *anesthetic* (not sedative) doses of certain barbiturates in patients receiving sulfanilamide or its derivatives. However, one must bear in mind that it has been shown that patients receiving doses of sulfanilamide or sulfapyridine apparently suffer no ill effects from the administration of such anesthetics as sodium pentothal. It has recently been shown, both *in vitro* and *in vivo*, that para-aminobenzoic acid neutralizes the bacteriostatic effects of sulfanilamide and its derivatives. Although clinical data are not at hand, this observation suggests that one should proceed slowly in patients receiving sulfonamide compounds, with the use of local anesthetics, such as procaine, which are esters of para-aminobenzoic acid. It has been demonstrated that procaine breaks down to para-aminobenzoic acid and, hence, will antagonize the therapeutic effects of the sulfonamide group of drugs.

Recently, considerable interest has been aroused in the local use of sulfanilamide and its derivatives in treatment of superficial infections. At the present time our knowledge concerning the true value of these compounds when used locally continues meager. Jensen et al.[8] and Key and his associates[9] have shown that the local application of powdered sulfanilamide in cleanly debrided compound fractures markedly cuts down the incidence of infection in such types of wounds. Fragmentary reports from England are beginning to indicate that the local use of sulfanilamide and sulfapyridine in prophylaxis of war wounds has resulted in a definite decrease in the incidence and severity of wound infection. It has been suggested by the Committee on Chemotherapeutic and Other Agents of the National Research Council that in the prophylaxis of war wounds an initial dose of 6.0 grams of sulfanilamide be administered by mouth and that the wounds be treated locally with crystalline sulfanilamide with the recommendation that 5 grams of sulfanilamide be used per 50 sq. in. of exposed surface and that the total amount of sulfanilamide applied locally should not exceed 10 grams. On extensively debrided surfaces this can be sprayed on easily with a powder atomizer.

In our own experience we have noted that streptococcal ulcers, indolent superficial staphylococcal infections, wounds and burns infected with mixtures of pathogenic microorganisms often clear up promptly when treated locally with powdered sulfanilamide or its derivatives. It is probable that the main value of the local use of sulfonamide compounds is that it is possible to obtain relatively high concentrations of these drugs in superficially infected tissues.

At the present time there is some controversy regarding the combined use of specific sera and antitoxins and sulfanilamide or its derivatives. In table 2 are given the indications for such combined uses. As may be seen from the table, only in patients severely ill with pneumococcal lobar pneumonia, or in patients moderately or severely ill with scarlet fever, is there definite information which leads us to believe that combined sero- and chemotherapy is of real value.

Table 2

INDICATIONS FOR THE USE OF THERAPEUTIC ANTISERA WITH SULFANILAMIDE OR ITS DERIVATIVES

Gas Gangrene: Adequate clinical data are not available.

Meningococcal infections: No conclusive clinical evidence that the combined meningococcal antiserum and sulfanilamide is better than sulfanilamide alone.

Pneumococcal lobar pneumonia: Patients who are severely ill should receive *adequate amounts* of type specific pneumococcal antiserum as well as full doses of sulfathiazole.

Staphylococcal infection: Clinical evidence as to the value of combined therapy is not available.

Scarlet fever: Patients who are moderately or severely ill should receive *adequate amounts* of scarlet fever antitoxin as well as sulfanilamide.

Indications for the prophylactic use of sulfanilamide or its derivatives have not been thoroughly established. In table 3 we have listed the possible prophylactic uses of these drugs. It seems quite clear at the present time that administration for a period of ten days to two weeks of adequate doses of sulfanilamide (either perorally and/or locally) to patients suffering from compound fractures prevents the development of gas gangrene and probably other types of infection. There also seems to be good reason to believe that, if the earliest stages of otitis media (that of the beginning earache) are treated with sulfanilamide or sulfathiazole for a period of forty-eight to seventy-two hours, few children will develop purulent infections of the middle ear with the possible resulting train of com-

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[8] Jensen, N. K., Johnsrud, L. W. and Nelson, M. C.: Local Implantation of Sulfanilamide in Compound Fractures. Surgery, 6:1-12, July, 1939.

[9] Key, A. J. and Lembeck, J. A.: Local Use of Sulfanilamide in Compound Fractures and Other Wounds. Indust. Med. 9:493-497, Oct., 1940.

Table 3

INDICATIONS FOR POSSIBLE PERORAL PROPHYLACTIC USE OF SULFANILAMIDE OR ITS DERIVATES

SULFANILAMIDE	SULFAPYRIDINE	SULFATHIAZOLE	SULFAGUANIDINE
Burns	Otitis Media	Burns	Large bowel resections
Compound fractures		Peritonitis (appendectomies, large bowel resections, etc.)	
Scarlet fever contacts when Dick test positive		Urinary tract infections Urologic operations)	
Extensive tissue injuries Accidental Operative			
Gunshot wounds			
Otitis media (earache)			
Peritonitis (appendectomies, large bowel resections, etc.)			
Rheumatic fever (quiescent stage)			

plications. Observations of Ravdin and Lockwood[10] show quite clearly that the routine use of adequate doses of sulfanilamide in the postoperative treatment of appendicitis has markedly decreased the morbidity and case fatality rate from peritonitis occurring as a complication of appendicitis. Also the work of Thomas et al.[11] and of Coburn and his associates[12] seems to point to the fact that in the northern half of this country the administration of small daily doses of sulfanilamide from October 1 to June 1 prevents the recurrence of active manifestations of rheumatic fever in patients suffering from that disease. If these latter observations could be widely confirmed, a most important prophylactic measure would be at our disposal.

Administration of sulfathiazole as a prophylactic agent to patients who are undergoing resection of the large bowel, or who have the risk of developing peritonitis following operative procedures in the abdomen, has seemed to be most effective in Johns Hopkins Hospital during the past year. In those patients who have to undergo a resection of the large bowel the drug is started in doses of 1.0 gram every four hours on the afternoon prior to the day of operation, and is continued until about the sixth postoperative day. Sulfaguanidine has also been used successfully in the prophylaxis of infection following resection of the large bowel. When the drug is used in this manner, the dosage is 0.1 gram per kilo of body weight per os every eight hours day and night for six days prior to operation. Then, as soon as possible after operation the same doses of the drug are started again by mouth and are continued for from five to seven postoperative days. The prophylactic effect of the drug when used in this fashion results from its ability to decrease markedly the "coliform" flora of the bowel. *Sulfaguanidine does not sterilize fecal material.*

In tables 4 to 10 are shown amounts of sulfanilamide or its derivatives which we believe represent therapeutically effective doses for severe infections due to the hemolytic streptococcus, the meningococcus, the Welch bacillus, the pneumococcus, the staphylococcus and the gonococcus, and for mild or moderately severe tissue infections in which therapy with these drugs is indicated. When one is prescribing sulfanilamide for the treatment of a severe infection it is highly important to give a large initial dose in order that a therapeutically efficient concentration of the drug may be obtained rapidly; then sufficient doses of the drug should be given at four hour intervals in order to maintain and augment the effect obtained by the initial dose. In general, in severe infections in which sulfanilamide is being employed as the drug of choice, a concentration of the drug of 10 mg. per cent in the blood should be maintained until a marked clinical improvement in the condition of the patient has been noted. Then the amount of the drug given each day may be slowly decreased. In milder tissue infections, in which sulfanilamide is the drug of choice, concentrations of around 5 mg. per cent of the drug should be maintained in the blood.

On the basis of our present knowledge, it seems as though sulfadiazine, sulfapyridine and sulfathiazole were equally effective in treatment of pneumococcal pneumonia, with sulfadiazine generally being the drug of choice because it is best tolerated by the patient. If sulfadiazine is not available and sulfapyridine or sulfathiazole is being used during the febrile period of the pneumonia, the concentrations of these drugs should be kept at 4 to 6 mgs. per cent in the blood of the patients. In patients ill with pneumonia and who are receiving sulfadiazine, blood concentrations of the drug of from 10 to 15 mg. per cent should be maintained. Doses of sulfadiazine which will produce these levels are shown in table 8.

In staphylococcal infections, with the possible exception of staphylococcal meningitis, sulfathiazole should always be employed. The exception of staphylococcal meningitis is the result of the observation that *sulfathiazole does not pass over readily into the spinal fluid.* This drug should not

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[10] Ravdin, I. S., Rhoads, J. E. and Lockwood, J. S.: Use of Sulfanilamide in Treatment of Peritonitis Associated with Appendicitis, Ann. Surg., 111:53-63, Jan., 1940.

[11] Thomas, C. B. and France, R.: Prophylactic Use of Sulfanilamide in Patients Susceptible to Rheumatic Fever, Bull. Johns Hopkins Hosp., 64:67-77, Jan., 1939.

[12] Coburn, A. F. and Moore, L. V.: Prophylactic Use of Sulfanilamide in Streptococcal Respiratory Infections, J. Clin. Investigation 18: 147-155, Jan., 1939.

Table 4

Dosage of Sulfanilamide

SULFANILAMIDE

A. Severe infections.
  Initial dose (oral): 0.10 gram per kilogram of body weight.
  Subsequent doses (oral): Total daily dose based on 0.10 gram per kilogram, this to be divided in 6 parts and given q.4 h. day and night until 7 days of normal temperature have elapsed.

B. Mild and moderately severe infections.
  Total daily dose based on 0.10 gram per kilogram of body weight, this to be divided into 6 parts and given q.4 h. day and night until 5 days of normal temperature have elapsed.

C. Hemolytic streptococcal otitis media, mastoiditis or osteomyelitis present a special problem because these infections involve bone. Sulfanilamide should be continued in moderate doses for at least 10 days after a *clinical* cure has been effected.

Table 5.

Dosage of Sulfapyridine and Sulfathiazole

PNEUMOCOCCAL PNEUMONIA

A. Adults.
  Initial dose (oral) either 4.0 grams.
  Subsequent doses (oral) either drug. 1.0 gram q. 4 h. day and night until the temperature has been normal for 72 hours.

B. Infants and children.
  Initial dose (oral) either drug, 0.15 gram per kilogram up to 25 kilograms of body weight.
  Subsequent doses (oral) either drug. Total daily dose is based upon 0.15 gram per kilogram up to 25 kilograms of body weight, this to be divided into 4 parts and given q. 6 h. day and night until the temperature has been normal for 48 hours.

STAPHYLOCOCCAL PNEUMONIA

A. Adults and children.
  Sulfathiazole is the drug of choice. If satisfactory response is not obtained, increase the daily dose by 25 to 50 per cent. Continue until temperature has been normal for 5 days.

Table 6

Dosage of Sulfathiazole in Staphylococcal Infections Other Than Pneumonia

A. Chemotherapy should not be used for boils, mild furnculosis, etc.

B. *Adequate surgical therapy* should *always be used* in conjunction with chemotherapy.
  I. Diffuse staphylococcal cellulitis, lymphangitis, etc., in adults.
    Initial dose (oral): 4.0 grams.
    Subsequent doses: 1.5 grams q. 4 h. day and night until the infection has ceased spreading. Then 1.0 gram q. 4 h. day and night for 7 days.
  II. Staphylococcal bacteremia in adults.
    Initial dose (oral): 4.0 grams.
    Subsequent doses: 1.5 grams q. 4 h. until the temperature has been normal for 48 hours. Then 1.0 gram q. 4 h. for 14 days. The 0.5 gram q. 4 h. for another 14 days.
  III. Staphylococcal infections in infants and children. The initial subsequent doses are reduced from those advised for adults in proportion to the weight of the infant or child.

Table 7

Dosage of Sulfapyridine or Sulfathiazole in Treatment of Gonorrhea in the Male

Either drug may be used.

First day dose: 3.0 grams, *i.e.*, 0.5 gram at 3 hour intervals six times a day.

Subsequent doses (2nd to 10th days): 2.0 grams per day.

If by the 5th day of treatment a marked improvement in symptoms and signs of the disease has not taken place, shift to the other drug and carry on as outlined above. If a shift in medication has been made and after 5 days marked improvement is not observed, *stop drug therapy* and begin *conservative local treatment*. In any event *do not continue treatment with these drugs beyond 15 days in patients suffering from gonorrhea.*

Table 8

Dosage of Sulfadiazine and Sodium Sulfadiazine in Treatment of Pneumococcal Pneumonia

A. Adults
  1. Oral Therapy:
    Initial Dose: Sulfadiazine—0.10 gram per kilogram of body weight.
    Maintenance Dose: Sulfadiazine—1.0 gram q.4 hours day and night until the temperature has been *normal* for three days.
  2. Parenteral and Oral Therapy:
    Initial Dose Parenteral: Sodium Sulfadiazine—0.10 gram per kilogram of body weight made up as a 5% *solution* in *sterile distilled* water. (*Do not boil or autoclave.*) Administer slowly by the *intravenous route.*
    Maintenance Dose Oral: Sulfadiazine—1.0 grams q.4 hours day and night until the temperature has been *normal* for three days.
  3. Parenteral Therapy:
    Initial Dose: Sodium Sulfadiazine—0.10 gram per kilogram of body weight made up as a *5% solution* in *sterile distilled* water. (*Do not boil or autoclave.*) Administer slowly by the *intravenous route.*
    Maintenance Dose: Sodium Sulfadiazine—0.05 gram per kilogram of body weight made up as a *5% solution* in *sterile distilled* water. (*Do not boil or autoclave.*) Administer slowly by the *intravenous route* q.12 to 18 hours. Determine the blood concentration of the drug daily. Concentrations of more than 20 milligrams % are inadvisable. Change to oral therapy with sulfadiazine as soon as possible.

B. Infants and Children
  The initial doses of sulfadiazine and sodium sulfadiazine are calculated and administered in the same way as for adults. The maintenance doses of sodium sulfadiazine are likewise estimated in the same manner. The total daily dose of *sulfadiazine* is calculated upon the basis of 0.10 gram per kilogram of body weight, is divided into *six parts* and is given at 4 hour intervals day and night until the temperature has been *normal* for *48* hours.

Table 9

Dosage of Sulfadiazine and Sodium Sulfadiazine in Treatment of Hemolytic Streptococcal Infections

A. Mild and Moderately Severe Infections
  1. Oral Therapy:
    Initial Dose: Sulfadiazine—0.05 gram per kilogram of body weight.
    Total Daily Dose: Sulfadiazine—0.10 gram per kilogram of body weight divided into six doses and given q.4 hours, day and night until the temperature has been *normal* for five days.

B. Severe Infections
  1. Parenteral and Oral Therapy:
    Initial Dose Parenteral: Sodium Sulfadiazine—0.15 gram per kilogram of body weight made up as a *5% solution* in *sterile distilled* water. (*Do not boil or autoclave.*) Administer slowly by the *intravenous* route.
    Total Daily Dose Oral: Sulfadiazine—0.15 gram per kilogram of body weight, divided into six equal doses and given at 4 hour intervals, day and night until the temperature has been *normal* for five days. Then decrease dose of drug slowly until patient is ambulatory.
  2. Parenteral Therapy:
    Initial Dose: Sodium Sulfadiazine—as advised above.
    Maintenance Dose: Sodium Sulfadiazine—0.05 gram per kilogram of body weight made up as a *5 per cent solution* in *sterile distilled* water. (*Do not boil or autoclave.*) Administer slowly by the *intravenous* route q.12 hours. Determine the blood concentration of the drug daily. Concentrations of more than 20 milligrams per cent are inadvisable. Change to oral therapy with sulfadiazine as soon as possible.

Table 10

PARENTERAL USE OF SULFANILAMIDE, SULFAPYRIDINE OR SULFATHIAZOLE

Sulfanilamide: To be used only when oral medication is impossible.

Initial dose: 0.10 gram per kilogram of body weight made up in a 1 per cent solution in sterile physiological saline or 1/6 molar sodium racemic lactate.

Subsequent doses: 0.05 to 0.075 gram per kilogram of body weight in a 1 per cent solution, q. 6 to 8 h.

It is best to give solutions of sulfanilamide by the subcutaneous route. Oral administration of sulfanilamide should be started as soon as possible.

Sodium Sulfapyridine or Sodium Sulfathiazole: To be used only when oral medication is impossible or satisfactory concentrations of the drug cannot be obtained by oral administration.

Initial dose: 0.06 gram per kilogram of body weight of the sodium salt made up in a 5 per cent solution of *sterile freshly distilled water. Do not try to sterilize by autoclaving or boiling.*

Subsequent doses: 0.03 gram per kilogram of body weight of the sodium salt in a 5 per cent solution repeated at about 6 hour intervals.

Always give slowly (10-15 minutes) by the intravenous route. Oral administration of sulfapyridine or sulfathiazole should be started *as soon as possible.*

be used in the treatment of small boils, mild furuncles, etc. which result from superficial infections with staphylococci, because the risk of toxic manifestations from sulfathiazole is greater than the therapeutic results which may be obtained. *It is also of extreme importance to remember that adequate surgical therapy should always be used in conjunction with chemotherapy in the treatment of staphylococcal infections,* and that when an apparent marked improvement has taken place in a patient severely ill with a staphylococcal infection, if the drug is discontinued too early, a recurrence of the infection is very likely to happen. On the basis of present data concentrations of 5 to 10 mg. per cent should be maintained in the blood of patients who are severely ill with staphylococcal infections. As has been pointed out, relatively low concentrations of the drug, 2 to 5 mg. per cent, are found in the blood of patients who are receiving sulfaguanidine.

Sulfanilamide and the sodium salts of sulfapyridine, sulfathiazole and sulfadiazine may be given by the parenteral route. Sulfanilamide is best administered by the subcutaneous route, while sulfapyridine and mulfathiazole should be given by the intravenous route. When these drugs are administered by these routes, it is always wise to begin the oral administration of the drug as soon as the patient's condition permits, because the peroral route of administration of these drugs is, in general, the most satisfactory.

In patients whose infections involve bone or bony tissue the use of these drugs presents a special problem because a recurrence of the infection is liable to take place unless all foci of infection have been eliminated. For this reason, again, adequate surgical drainage is important, and in such conditions as otitis media, mastoiditis or osteomyelitis, the administration of sulfanlamide or its derivatives should be continued in moderate doses for at least ten days after a *clinical cure has been effected.* The nonobservance of this rule has been, in a large degree, the cause of the unsuccessful use of these drugs in otitis media or mastoiditis and for the reported masking of the symptoms and signs of these diseases.

One of the curious results of the intensive clinical work that has been done with sulfanilamide and its derivatives and of the publicity derived following such investigations during the past four years, has been to make physicians overcautious about the possible toxic manifestations of these drugs, while the patients, who read only of the "wonder drugs" in their local press, are clamoring for these agents whenever they have the mildest scratch in their throats or on their fingers. It is our opinion that we, as physicians, have been right in adopting a somewhat cautious attitude towards the use of these drugs, but we also feel that as our experience has grown it is now possible for the average physician to use them intelligently even in the home, and that he should not worry too much about their possible toxic manifestations.

In table 11 are given the various manifestations of drug toxicity as we have noted them in hospitalized adults. It is evident from this table that the toxic reactions resulting from these drugs are quite frequent, but that those which are dangerous are relatively uncommon. It is our opinion that, while it is always advisable whenever possible to utilize every available means of laboratory control in folowing a patient receiving sufanilamide or its derivatives, practically all of the toxic reactions associated with the administration of these drugs can be detected by the physician, if he exercises careful clinical control over his patient.

Patients who are receiving sulfanilamide or its derivatives for the first time *should be seen at least once a day,* and at this time the attending physician should inquire as to how the patient feels, with special reference to the symptoms of headache, body-aching or malaise, because these symptoms are the precursors of many of the toxic reactions of sulfanilamide or its derivatives. In addition to the inquiries concerning the patient's symptoms, the physician should carefully examine the sclerae for the presence of jaundice, and the conjunctivae for

Table 11

MANIFESTATIONS OF DRUG TOXICITY NOTED IN ADULTS TREATED WITH SULFANILAMIDE, SULFAPYRIDINE, SULFATHIAZOLE, SULFAGUANIDINE OR SULFADIAZINE

Reaction	*Sulfanilamide*	*Sulfapyridine*	*Sulfathiazole*	*Sulfadiazine*
Nausea, vomiting	Fairly common	Frequent	Uncommon	Rare
Dizziness	Common	Common	Uncommon	Rare
Psychoses*	0.6%; occur early	0.3%; occur early	Rare	?
Neuritis**	Very rare	Not reported	Rare	Not reported
Cyanosis	Very common, early and late.	Faint, common, early and late.	Uncommon	Rare
Acidosis*	1.9%; occurs at any time; rare if soda is used.	None	None	None
Fever*	10%; generally 5th to 9th day; may occur 1st to 30th day.	4%; generally 5th to 9th day; may occur 1st to 30th day.	10%; generally 5th to 9th day.	Uncommon; 1% to 2%.
Rash*	1.9%; may take any form, generally 5th to 9th day, may occur 1st to 30th day.	2%; may take any form, 5th to 9th day, may occur 1st to 30th day.	5%; nodular type common, may take any form, 5th to 9th day.	Uncommon; 1% to 2%.
Hepatitis**	0.6%; early or late	Not seen, but reported.	Rare	Not reported
Leukopenia with granulocytopenia**	0.3%; early or late	0.6%; early or late	1.6%; early or late	Rare
Acute agranulocytosis*	0.1%; occurs 14th to 40th day, common 17th to 25th day.	0.3%; occurs 14th to 40th day, common 17th to 25th day.	Not reported	Not reported
Mild hemolytic anemia.	3%; early or late	Rare	Not reported	Not reported
Acute hemolytic anemia**	1.8%; occurs 1st to 5th day.	0.6%; occurs 1st to 5th day.	Very rare	Not reported
Hematuria*	Not reported	8%; generally early.	2.5%; generally early	Rare
Anuria with azotemia.**	Not reported	0.3%; generally 1st 10 days.	0.7%; generally 1st 10 days.	Not reported
Hyperleukocytosis*	Generally in presence of acute hemolytic anemia.	Generally in presence of acute hemolytic anemia.	Not reported	Not reported
Injection of sclerae and conjunctivae**	Not reported	Not reported.	4%; may occur with rash and fever, 5th to 9th day.	Rare; 0.3%
Purpura hemorrhagica**	Not seen, but reported.	Not seen, but reported.	Not reported	Not reported
Ocular and auditory disturbances.**	Rare	Rare	Very rare	Not reported
Jaundice.**	With acute hemolytic anemia or hepatitis.	With acute hemolytic anemia or hepatitis.	With acute hemolytic anemia or hepatitis.	Not reported
Painful joints.*	Reported	Not reported	Reported with rash, etc.	Not reported
Stomatitis.*	Rare	Not reported	Not reported	Not reported
Gastrointestinal tract disturbances*	Bleeding rare, diarrhoea uncommon.	Rare	Very rare	Not reported

*Best to stop drug and force fluids.
**Imperative to stop drug and force fluids.
Sulfaguanidine has shown little toxicity to date. Drug rash and fever have been noted.

injection or paleness. The presence of jaundiced sclerae with pale conjunctivae probably means that an acute hemolytic anemia is developing. If the conjunctivae are not pale, then the jaundice probably results from liver damage. The occurrence of injected conjunctivae and sclerae, together with smarting and burning of the eyes, occurs as a toxic manifestation only in the course of sulfathiazole therapy.

As an added check to the conjunctival examination the oral mucous membrane should be looked at, and inquiry should be made as to whether or not the patient is developing a sore throat. If the patient has been treated with sulfanilamide or one of its derivatives for more than a week, and while under treatment develops a moderately severe sore throat, this may indicate the beginning of an agranulocytosis, because, if he is being treated adequately, it would be quite unlikely that he would be getting a hemolytic streptococcal sore throat. The skin of the body should always be looked at carefully for the presence of rash, because frequently in the early stage of such a toxic manifestation the patient or his attendants will miss the fine macular eruption in the skin.

At this point we can stress the importance of keeping *patients who are receiving one of the sulfonamide compounds out of the direct rays of the sun and away from sources of ultraviolet light,* because there is no doubt that a certain number of patients who develop a skin rash in the course of therapy do so because of a photosensitization. We have recently seen a patient who on the twenty-third day of therapy with sulfadiazine (total daily dose, 1.0 gram) went fishing and exposed his hands and face to the sun. Within a few hours he developed an intense itching erythema of the hands and face with no signs of rash elsewhere on the body. For this reason we believe any patient receiving these drugs should stay out of the sun until three days after he has stopped taking the drug, or until after the time when the drug has been completely excreted.

The temperature should always be taken in order to detect whether drug fever is present, and if the patient says he has been having chills, and at the time it is taken the temperature is normal, arrangements should be made to have it taken frequently during the next twenty-four hours in order to determine whether or not fever is present. We have just observed a patient ill with chronic phemphigus and in whom the lesions of the disease were secondarily infected with staphylococci. An attempt was made to eliminate the superficial infections by the use of a spray containing sulfadiazine. Although but slight traces of the drug were present in the blood, this patient developed a typical drug fever during the second week of treatment which disappeared as soon as the sprays were discontinued and reappeared when the spray was used a week later.

Inasmuch as sulfanilamide does not directly damage the kidneys, no special precautions have to be observed in respect to the urine of patients who are receiving it, but it is very important that the urine of those who are receiving sulfapyridine, sulfathiazole or sulfadiazine be looked at when freshly voided, and that the total urine output be measured daily. This can be done easily by the patient's attendants or family, and a urine volume of at least 1,000 cc. per day should be maintained. If the urine output starts to drop and the fluid intake has been properly maintained in patients who are receiving sulfapyridine, sulfathiazole or sulfadiazine, it is very good evidence that the drugs are damaging the kidneys, either due to a direct toxic effect upon the kidney epithelium or as a result of mechanical blockage by aggregations of acetyl sulfathiazole or acetyl sulfapyridine crystals. However, *in the face of a normal urine output the presence of these crystals in the voided urine should never be considered an indication for stopping the drug.* The appearance of gross blood in the urine at any time in the course of therapy with these drugs constitutes a good reason for stopping therapy.

Thus, it can be seen that, with the possible exception of leukopenia or agranulocytosis, all of the toxic reactions resulting from the administration of these drugs can be discovered, if the patient is kept under careful observation during his course of treatment, and for this reason it has proved highly practical for careful physicians to employ these drugs in patients who are being treated in their homes. If toxic manifestations appear, these drugs should be discontinued and fluids should be forced vigorously in order to eliminate them from the system as rapidly as possible.

EXPERIENCE WITH NEW SULFONAMIDE IN UROLOGIC PRACTICE

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Since February, 1940, I have been using a new sulfonamide in the treatment of urinary tract infections. This drug, p-amino - benzene - sulfonyl - acetyl-imide, or sulfacetimide[1], may be described as a sulfanilamide derivative in which the amino group attached to the SO_2 group has been acetylated. This method of acetylation provides a sulfonamide that is considerably less toxic than the mother substance and is highly active therapeutically. It has been shown that this drug is readily absorbed from the intestinal tract when administered orally, and after absorption circulates in the blood stream and passes into the cerebrospinal fluid.

In the absence of renal insufficiency, concentration of the compound in the blood and urine has been found to be the same in individuals with renal infections and in healthy controls. Blood concentration reaches its maximum a short time, about three hours, after administration and is readily held at the desired level by further oral administration without undesirable accumulation.

The effects of sulfacetimide on the formed elements of the blood appear to be negligible. In a few cases a slight reduction in hemoglobin has been noted. "This depression in the hemoglobin was transitory and in none of our cases was any permanent depressive effect on the hemopoietic system noted."[2]

In the thirteen months covered by this report sixty-two cases have been treated with sulfacetimide. Bacteriologically, these cases have been broadly classified as in table 1.

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[1] This drug will be marketed under the trade name sulamyd. For generous supplies and cooperation in the conduct of this clinical investigation the writer is indebted to Dr. Edward Henderson of the Medical Research Division, Schering Corporation, Bloomfield, New Jersey.

[2] Young, H. H., Hill, J H. Jewett, H. J. and Satterthwaite, R. W.: Sulfacetimide: Toxicity and Efficacy in Gonorrhea and Urinary Tract Infections. J. Urology, 45: 903-928, June, 1941.

Gram-negative bacilli		37
B. coli	34	
Alkaligenes fecalis	1	
B. mucosus capsulatus	1	
Mixed infection	1	
Gram-positive cocci		12
Staph. albus	8	
Strep. fecalis	3	
Strep. hemolyticus	1	
Gram-negative cocci		6
N. gonorrhae	6	
Unclassified infections		7

Table 1

Urologically, the diagnoses were as in table 2.

Pyelonephritis		2
Pyelitis and cystitis		42
Bacillary	26	
Coccal	12	
Mixed infection	4	
Postresection pyurias		10
Urethritis, gonorrheal		6
Prostatitis, chronic, nonspecific		2

Table 2

For tabulation of these cases, see table 3.

The notation that a renal study was done means complete urologic examination, i.e., cystoscopy, bilateral ureteral catheterization, microscopic examination, smear and cultures of the separate kidney urines and of the bladder urine, p'hthalein functional test on both kidneys and pyelograms. The laboratory and roentgen work was done by Dr. R. W. Shirey, Diplomate of the American Board of Clinical Pathologists, who is in charge of the laboratory and roentgen departments at St. Elizabeth's Hospital, Yakima.

Dosage in the average case has been 4 grams in twenty-four hours, administered in two 0.5 Gm. tablets, four times a day. However, as much as 6.0 grams in twenty-four hours have been given for fourteen days at a time with no untoward reaction, and a few intolerant patients have done well on as little as 1.5 Gm. in twenty-four hours. One such patient, under treatment at the present time but whose treatment was begun too recently to be included in the present series, has had bilateral pyelitis for at least fifteen years and has been under my care off and on for eight years, with periods of intensive treatment. Under sulfacetimide his urine has become microscopically negative for the first time in fifteen years and is being held that way with a dose of 1.5 Gm. in twenty-four hours, which dose he tolerates quite well.

Results have been classified as brilliant when the patient has become comfortable in twenty-four hours and the urine has become negative microscopically and the patient free of all symptoms in less than seven days of treatment, and there has been no recurrence. Treatment has always been continued for a few days beyond this point, probably because of my unwillingness to believe that such a short course of treatment could be completely effective (table 4).

Brilliant	5	Per cent	
Excellent	17	31	50
Good	9		
Fair	6		9.6
Poor	24		38.7
Failed to return	1		1.6

Table 4. Results

For example, case No. 2426, with marked dysuria, frequency and nocturia, was symptom-free and the urine negative on the fifth day of medication. Medication was continued through the eleventh day. However, case No. 1050, with twenty-seven days total treatment was also placed among the brilliant results because of history of periodic attacks of "cystitis" over a period of thirty or forty years, and the fact that the urine became sterile in a remarkably short time, considering the severity and duration of the infection and the presence of moderate bilateral hydronephrosis and ptosis.

An excellent result is noted when the patient has become symptom-free within a week and the urine microscopically negative within two weeks, and with no recurrence. A good result is recorded when some intolerance was manifest, but a sterile urine eventually achieved. Results have been classified as fair when pyuria and symptoms cleared under medication, but recurred when treatment was discontinued. A poor result means that the drug had little or no effect on the disease, or could not be tolerated by the patient.

The venereal cases are included only because it was desired to report all cases treated with sulfacetimide during this period. Very little venereal work is done in this office, and no conclusions whatever can be drawn from these few cases. In the two cases of chronic nonspecific prostatitis, the drug had no apparent effect whatever.

In the pyelitis and cystitis cases a good many of the results have been really brilliant, the urine becoming sterile and the patient symptom-free in a surprisingly short time. In coccal and bacillary infections of the urinary tract, in nonsurgical cases, not complicated by obstruction (and these are practically all pyelitis cases, even those labelled cystitis), sulfacetimide has proven to be by far the most useful drug I have ever used. Good to excellent results are quite uniform. Five brilliant results in a group of forty-two cases,* or over 11 per cent of the total, is just that many more than I have ever achieved with any other drug.

The postoperative pyurias. I have just finished a

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*The pyelitis and cystitis group, table 2.

Table 3. Case reports.

Case No.	Sex	Age	Diagnosis	Organism Responsible For Present Infection	Total Days Treated	Total Grms. Taken	Result	Side Action
2294	F.	58	Cystitis	B. coli	8	21	Excellent Sterile urine	None
2411	F	66	Cystitis	B. coli	7	28	Excellent Sterile urine	Slight nausea, headache, loose bowels
1059	F.	88	Urinary infection, unclassified	B. coli	27	80.5	Brilliant Sterile urine	None
2450	F.	55	Urinary infection, unclassified	B. coli	9	36	Brilliant Sterile urine	None
2264	M.	46	Urinary infection, unclassified	B. coli	8	24	Excellent Sterile urine	None
2285*	F.	67	Bilateral pyelitis; cystitis	B. coli	11	33	Excellent Sterile urine	None
2017*	F.	59	Bilateral pyelitis; cystitis	B. coli	9	30	Excellent Sterile urine	Tingling hands, feet
1997*	F.	27	Pyelitis, cystitis	B. coli	8	32	Poor	Tingling hands, feet
2262*	F.	26	Pyelitis, cystitis	B. coli	8	24	Excellent Sterile urine	Some nausea, weakness
2205*	F.	42	Pyelitis, cystitis	B. coli	21	56	Good Sterile urine	Lack of energy, vomiting
2382	F.	42	Pyelitis, cystitis, nephritis	B. coli	7	28	Poor	None
2425*	F.	64	Hydronephrosis, pyelitis, cystitis	B. coli	12	48	Fair	Nervousness
1813*	F.	33	Pyelitis, cystitis, ureteral stricture	B. coli	4	12	Poor	Nausea, malaise
2277*	M.	50	Pyelitis, cystitis, epididymitis	B. coli	12	41	Excellent Sterile urine	None
2426*	F.	32	Pyelitis, cystitis, leukoplakia of bladder	B. coli	11	44	Brilliant Sterile urine	Moderate depression
2294*	F.	55	Pyelitis, cystitis, leukoplakia of bladder	B. coli	16	48	Excellent Sterile urine	Loss of appetite
2242*	F.	25	Pyelitis, cystitis, leukoplakia of bladder	B. coli	8	21	Poor	Backache, nausea, tingling
1844*	M.	38	Pyelitis, chronic iritis, uveitis, arthritis	B. coli	46	224	Poor	Some nausea, tingling, diarrhea
103	M.	75	Pyelitis, epididymitis	B. coli	29	101	Poor	None
2480*	F.	48	Pyelitis, cystitis, leukoplakia of bladder	B. coli	29	92	Fair	Nausea, vomiting, urticaria
2461*	F.	72	Pyelitis, cystitis, ptosis and hydronephrosis, right	B. coli	13	52	Poor	None
2536*	F.	47	Pyelitis, cystitis	B. coli	7	28	Poor	Nausea, ringing ears, malaise
2548*	F.	48	Pyelitis, cystitis, acute	B. coli	20	82	Good Sterile urine	None
2440*	F.	34	Pyelitis, left; tuberculosis, right; nephrectomy, right	B. coli	85	255	Poor	None
2328	M.	62	Post operative pyuria after prostatectomy	B. coli	17	48	Fair	None
2068	M.	76	Post operative pyuria	B. coli	28	112	Good Sterile urine	None
2161	M.	80	Post operative pyuria	B. coli	11	33	Poor	None
1799	M.	86	Post operative pyuria	B. coli	52	115	Poor	Nausea, vomiting
1715	M.	66	Post operative pyuria	B. coli	53	204	Poor	None
2119	M.	74	Post operative pyuria	B. coli	1	4	Poor	Burning in esophagus, languid
2067	M.	76	Post operative pyuria	B. coli	17	51	Excellent Sterile urine	None
2004	M.	62	Post operative pyuria after resection bladder tumor	B. coli	36	125	Poor	Dizziness, breathlessness
2495	M.	75	Post operative pyuria	B. coli	14	56	Excellent Sterile urine	None
2419	M.	62	Post operative pyuria after prostatectomy	B. coli	37	148	Poor	None
2403*	F.	29	Cystitis, hydronephrosis, hydroureter	B. coli	35	140	Poor	None
1594*	F.	38	Cystitis, pyelitis	Gram+ coccus	10	53	Brilliant Sterile urine	None
2194*	M.	40	Pyuria, hydronephrosis, ureteral calculus	Strep. fecalis	14	48	Poor	Gastric upset, urticaria
2270*	F.	43	Pyelitis, cystitis	Strep. fecalis	7	21	Excellent Sterile urine	None
1990*	F.	24	Pyelitis, cystitis	Coccus	13	52	Excellent Sterile urine	None
2253*	F.	38	Pyelitis, cystitis , arthritis	Strep. hemolyticus	17	51	Fair	None
2457*	F.	50	Pyelitis, cystitis	Staph. albus	73	191	Poor	None
2319*	F.	34	Cystitis	Staph.	18	61	Excellent Sterile urine	Malaise
2389*	M.	24	Pyelitis, cystitis. Right renal tuberculosis and nephrectomy	Staph. albus	28	77	Excellent Sterile urine	Slight gastric upset
2505*	F.	32	Pyelitis, cystitis	Strep. fecalis	11	46	Excellent Sterile urine	None

Case No.	Sex	Age	Diagnosis	Organism Responsible For Present Infection	Total Days Treated	Total Grms. Taken	Result	Side Action
2544*	M.	46	Pyelitis, cystitis	Staph. albus	14	49	Fair	Edema of feet and hands, pain in thighs
2465	F.	32	Cystitis	Gram+ coccus	17	68	Good Sterile urine	None
2056*	F.	58	Acute cystitis	Non-specific	9	38.5	Brilliant Sterile urine	None
2248*	F.	26	Pyelitis, cystitis	B. coli Staph. albus	....	....	Failed to return	....
2395*	M.	64	Pyelitis, cystitis	A. fecalis	16	64	Excellent Sterile urine	None
2188*	F.	12	Pyelonephritis, hematuria	Non-specific	33	70	Fair	None
2491*	M.	52	Cystitis	B. mucosus capsulatus	11	44	Good Sterile urine	Malaise
2491	M.	52	Post operative pyuria	B. coli	16	64	Good Sterile urine	Nausea, malaise
2325*	M.	57	Cystitis, cystic seminal vesiculitis, paralysis agitans	Staph. albus B. coli	6	12	Excellent Sterile urine	None
1429*	M.	49	Bilateral renal calculi, renal tuberculosis	Non-specific	1	8	Poor	Nausea, weakness
2312	M.	24	Acute urethritis	Gonococcus	9	40.5	Good	None
2379	M.	25	Acute urethritis	Gonococcus	8	36	Poor	None
2347	F.	31	Acute urethritis, cervicitis	Gonococcus	121	66.5	Good	Nausea, tingling, vomiting
2448	M.	23	Chronic urethritis, prostatitis	Gonococcus	13	54	Good	None
2305	M.	23	Acute urethritis, prostatitis	Gonococcus	4	18	Poor	None
2493	M.	27	Acute urethritis	Gonococcus	8	34	Poor	None
349	M.	42	Prostatitis, chronic	Non-specific	18	58	Poor	Backache
2183	M.	21	Prostatitis, chronic	Non-specific	16	45	Poor	Diarrhea

*The asterisk indicates complete renal study.

survey of the time from operation to a microscopically negative urine in ninety-eight of my resection cases in which this information is in the records, and find that the average time is ninety-five days, regardless of the type of postoperative treatment. I also find that the majority of the cases come very close to this average, there being few either very much over or under this average. In this group, then, the virtue of any antiseptic is probably questionable, time appearing to be the essential factor.

Reactions for the most part have been negligible, although the percentage having slight reaction is rather high. I have found recently that the coincidental administration of nicotinic acid amide (nicotinamide) in doses of 50 mg., three or four times a day, seems to prevent most of these mild reactions.

This new drug seems to have a higher general level of effectiveness than the other sulfacompounds that I have used, or than other urinary antiseptics in general. However, the fact remains that with cases of urinary tract infection, apparently identical bacteriologically and clinically, it will be found that one will respond prompty to the administration of sufacetimide but not to sulfanilamide; the next perhaps will respond to sulfanilamide but not to sulfacetimide; the third will respond to neither but will recover quickly upon the administration of mandelic acid; and a fourth to none of these but to some other urinary antiseptic, etc.

While this drug appears to me to be more uniformly valuable than any other urinary antiseptic so far tested, it still remains but a part of our armanentarium; nor is it the intent of this paper to convey the impression that other urinary antiseptics are now obsolete. Most of these cases not cured with sulfacetimide have gone on to cure with other urinary antiseptics.

CONCLUSION

Sulfacetimide, a new sulfonamide, has been under clinical trial in my hands for the past year, and has been found to be more generally effective as a urinary antiseptic than any drug so far encountered.

WHY A BOY'S VOICE CHANGES

"The change in a boy's voice during puberty is due to the action of the male sex hormone produced by the sex glands," *Hygeia, The Health Magazine* says in answer to an inquiry. "The change in voice is one of the secondary male sex characteristics. The male sex hormone causes the larynx to enlarge, the vocal cords to elongate and the voice to become deeper in pitch. This change in the larynx occurs so rapidly as a rule in the pubescent boy that perfect control of the cords is temporarily lost and the voice is likely to crack. Once the change is completed, the cords come under control in a lower key than before.

"When the female develops certain types of tumors which produce excessive amounts of male hormone, the voice may change along with the growth of a beard. After removal of the tumor the beard and change in voice will disappear."

FALSE POSITIVE SEROLOGIC TESTS FOR SYPHILIS IN CHILDREN*

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It is common knowledge that many children showing positive serologic reactions for syphilis have no physical signs or history of the disease. An attitude is prevalent that positive serologic evidence is pathognomonic of syphilis in absence of certain diseases.

With the advent in recent years of newer flocculation and precipitation tests of increased sensitivity, many more positive reactions have been obtained. Thus more cases of syphilis have been discovered, also more biologic false positive reactions.

In reviewing the literature of the past ten years, considerable disagreement is noticed in regards to the interpretation of serologic tests for syphilis. Recently there has been a shift of opinion to a more cautious and conservative interpretation of the serum tests. Kahn, Eagle, Moore and other authorities state that use of tests of increased sensitivity has led to more false positive reactions.

There are many instances of positive serologic reactions occurring in certain well recognized disease entities other than syphilis. The incidence of these reactions varies greatly in different reports. Moore states the incidence in yaws to be 100 per cent; malaria, 100 per cent at some time during the infection; leprosy, 40-80 per cent; and infectious mononucleosis about 20 per cent. In diseases other than these, the occurrence of a false positive reaction is usually of a transitory nature, occurring during the height of a fever and disappearing when the temperature becomes normal. Moore reports at least forty examples of biologic false positive serologic tests, occurring in either normal persons or in febrile states during the past two to three years. The positive tests occurring with fever were due to acute infections of the respiratory tract, including pneumonia, vaccinia, rat bite fever and perhaps typhus fever.

A heterogeneous list of diseases, other than those named above, in which false positive serologic tests are occasionally reported includes: septicemia, spotted fever, endocarditis, scarlet fever, tuberculosis, pernicious anemia, xanthomatosis, severe jaundice, lymphogranuloma inguinale, lupus erythematosis, mycosis fungoides, leukemia.

Certain factors, other than technical errors, which occasionally operate to produce false positives are: (a) bacterial growth in serum (septicemia), (b) excess fat and digestive products in serum, (c) serum obtained under anesthesia, (d) serum obtained after death, (e) serum obtained while patient is under influence of alcohol, (f) positive transfer from mother (newborn).

The incidence of positive serologic tests in presumably healthy, normal, nonsyphilitic college students is reported by Eagle in a study of 40,545 students. He found 36 students (1 in 1,125 tested) who gave repeated positive reactions in the absence of historical or clinical evidence of syphilis. It is impossible to draw any definite conclusions as to whether these represented true biologic false positives or cases of latent syphilis.

Kahn states: "The control of syphilis is not likely to meet with complete success unless false positive reactions are eliminated. It is impossible to know how many such reactions are being recorded by laboratories throughout the country. According to the records of the official evaluation studies, the Kahn tests gave 0.05 per cent false positive reactions. This ratio, when applied to the population of the United States, would mean 65,000 false positive reactions. However, this figure would have to be multiplied by twenty if a test were employed which gives 1 per cent false positive reactions, generally considered a dependable test."

An analysis of why biologic false positive reactions occur will not be attempted in this paper. So far, explanations have been made only on a theoretical basis. McClean stated: "It is important to emphasize that the reaction is empiric only, and in essence is actually nonspecific. In such circumstances, no a priori reason exists why the patient's blood should not occasionally elaborate a globulin so closely similar to luetic reagin that biologically false positive reactions might result."

Cases of children admitted to Doernbecher Hospital or the Outpatient Clinic which have shown positive serologic tests by one or several of the different methods have been reviewed from 1930 to 1941. Of this group seventeen were found which might represent biologic false positive reactions.

Case 1. W. N., 11 yrs., 1937. Male. Full term. Normal delivery. Normal development. Negative family history. No history of symptoms suggestive of syphilis. No physical findings. Entered hospital with chronic mastoiditis and hemolytic streptococcic septicemia.

Serologic tests:
Blood serum, 4/28/37, 4 plus Kahn and Kolmer (checked 2X).
Blood serum, 5/4/37, 4 plus Kahn and Kolmer.
Blood serum, 5/29/37, 2 plus Kahn and Kolmer.
Blood serum, 7/3/37, Neg. Kahn and Kolmer.
Blood serum, 8/18/37, Neg. Kahn and Kolmer, 4 plus Kline (checked 2X).

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*From the Department of Pediatrics, University of Oregon Medical School, Portland, Oregon.

Blood serum, 9/11/37, Neg. Kahn, Kolmer and Kline.
Blood serum, 12/4/37, 4 plus Kahn, Kolmer and Kline.
Blood serum, 5/28/38, 2 plus Kline, neg. Kolmer.
Spinal, 5/4/37, Neg. Kolmer and Kahn. Cell count and protein normal.

Blood serology on mother and father negative on two occasions.

Treatment: 7/8/37, Stovarsol ¼ tab. daily for 1 wk., ½ tab. daily for 2 weeks.

Case 2. W. M., male, 3 yrs., 1939. Full term, normal delivery. No history of symptoms or physical findings of syphilis. Family history negative. Previous illnesses: measles and chicken pox.

Serologic tests:
Blood serum, 6/22/39, Positive (Lab. unknown).
Blood serum, 6/24/39, Positive (Howe Lab., Portland).
Blood serum, 7/1/39, Kahn and Kline 4 plus.
Blood serum, 7/8/39, Kahn and Kline 4 plus.
Blood serum, 7/29/39, Kahn and Kline 3 plus.
Blood serum, 10/7/39, Kahn and Kline 3 plus.
Blood serum, 11/6/39, Doubtful (State Lab.).
Blood serum, 1/20/40, Kahn and Kline 3 plus.
Blood serum, 1/30/40, Kolmer strongly positive.
Blood serum, 6/8/40, Kahn and Kline 1 plus.
Blood serum, 8/11/40, Kahn and Kline negative.
Blood serum, 1/10/41, Kahn and Kline negative.
Spinal, 7/8/39, Kolmer and Kahn negative. Normal protein and cell count.

Blood serology tests on mother, father and siblings negative.

Treatment: 5 sulpharsphenamine, 9 mapharsen, 21 bismuth at regular weekly intervals.

Case 3. K. T., male, 9 yrs. Full term normal delivery. Development normal. No history of symptoms or physical findings suggestive of syphilis. Family history negative. Entered hospital with a furuncle and cellulitis of the face. Temperature 102°.

Serologic tests:
Blood serum, 10/26/39, 4 plus Kahn and doubtful Kline.
Blood serum, 10/27/39, 4 plus Kahn and doubtful Kline.
Blood serum, 10/30/39, 4 plus Kahn and 3 plus Kline (State lab.).
Blood serum, 11/1/39, 3 plus Kahn and 1 plus Kline.
Blood serum, 11/18/39, 1 plus Kahn and neg. Kline.
Blood serum, 11/22/39, Negative.
Blood serum, 1/3/40, Neg. Kahn and Kline.
Blood serum, 6/19/40, Neg. Kahn and Kline.
Blood serum, 8/17/40, Neg. Kahn and Kline.
Spinal not done.

Mother's blood and spinal serology negative 6/19/40.

No treatment given.

Case 4. J. H., 9 mos. of age. Male. 1940. Normal full term delivery. Development normal. No history of symptoms or family history suggestive of syphilis. No physical findings. Entered hospital with paratyphoid fever due to Salmonella paratyphy "B." Temperature 102°.

Serologic tests:
Blood serum, 7/6/40, 4 plus Kahn and Kline 3 plus.
Blood serum, 7/8/40, 4 plus Kahn and Kline 3 plus.
Blood serum, 8/2/40, Kahn and Kline negative.
Spinal, 7/13/40, Kahn and Kolmer negative. Protein and cells normal.

Blood serology of mother and father negative. Roentgenograms of long bones negative.

No treatment instituted.

Case 5. G. B., 18 mos. Male. Normal delivery and development. Family history not known. No previous illnesses. No physical evidence of syphilis. Entered hospital with acute suppurative otitis media. Temperature 102°.

Serologic tests:
Blood serum, 2/10/40, Kahn and Kline 4 plus.
Blood serum, 2/13/40, Kahn and Kline 4 plus.
Blood serum, 4/18/40, Kahn and Kline negative.
Spinal not done.

Blood serology of mother and father negative on 2/17/40.

Roentgenogram of long bones for evidence of syphilis negative on 2/15/40.

No treatment given.

Case 6. F. B., 8 yrs. Female. Previous history of family not known. Entered hospital with acute meningococcic meningitis. Temperature 105°.

Serologic tests:
Blood serum, 4/25/38, Kahn and Kolmer negative.
Blood serum, 4/30/38, Kahn and Kolmer 4 plus.
Blodo serum, 5/1/38, Kahn 4 plus. Kolmer doubtful.
Spinal, 5/2/38, Kahn and Kolmer 4 plus. Protein 125 mg. Cells—3600.

Status of parents' serology not known.

No treatment for syphilis given. Case inadequately followed (out of city case).

Case 7. L. G., 9 yrs. Female. Normal delivery and development. No history of symptoms or physical findings suggestive of syphilis. No family history. Previous illnesses: tonsillitis, whooping cough, chicken pox, measles and mumps. Entered hospital on 10/8/40 with acute suppurative appendicitis.

Serologic tests:
Blood serum, 10/9/40, Kahn and Kline 4 plus.
Blood serum, 10/11/40, Kahn and Kline 4 plus.
Blood serum, 11/2/40, Kahn and Kline 3 plus.
Blood serum, 12/9/40, Doubtful (State lab.).
Spinal serology not determined.

Blood serum tests on mother, father and three brothers negative on 10/14/40.

No treatment instituted.

Case 8. J. E., 12 yrs. Female. 1940. No significant history of symptoms of physical findings of syphilis. No family history. Only complaint was failure to gain. No fever.

Serologic tests:
Blood serum, 4/1/40, Kahn and Kline 4 plus.
Blood serum, 4/8/40, Kahn 4 plus, Kline 3 plus.
Blood serum, 5/25/40, Kahn neg., Kline 4 plus (after standing 12 hrs., 1 plus).
Blood serum, 6/15/40, Kahn and Kolmer negative. Kline 2 plus.
Blood serum, 9/28/40, Kahn and Kline negative.
Spinal not done.

Status of parents' serology not known.

Treatment: 9 injections of bismuth.

Case 9. B. W., 15 yrs. Female. No significant history of symptoms or physical findings suggestive of syphilis. Negative family history. Entered hospital with diagnosis of possible pneumonia or bronchiectasis. Temperature 104°.

Serologic tests:
Blood serum, 2/29/36, Kahn and Kolmer negative.
Blood serum, 9/30/40, Doubtful.
Blood serum, 10/9/40, Kahn 4 plus, Kline 1 plus.
Blood serum, 10/10/40, Kahn 3 plus, Kline 1 plus.
Blood serum, 11/22/40, Kahn and Kline negative.
Blood serum, 12/18/40, Kahn and Kline negative.
Blood serum, 1/14/41, Kahn and Kline negative.
Spinal not done.

Parents' serologic status not known.

No treatment instituted.

Case 10. J. S., 4 yrs. Male. 1934. No history or physical findings of syphilis. Family history negative. Only previous illness was scarlet fever in 1933. Entered hospital with pulmonary tuberculosis. Temperature 101°.

Serologic tests:
Blood serum, 4/17/34, Kahn and Kolmer 4 plus.
Blood serum, 4/20/34, Kahn 2 plus, Kolmer 4 plus.
Blood serum, 6/12/34, Kahn and Kolmer negative.
Blood serum, 11/21/34, Kahn and Kolmer negative.
Blood serum, 4/19/34, Kahn and Kolmer negative.
Spinal, 4/26/34, Kahn and Kolmer negative. Cells and protein normal.

Serologic tests on mother and father negative on 4/19/34.

Treatment: 4/28/34, Stovarsol ½ gr. daily for 3 wks.

Case 11. R. C., 4 yrs. Male. 1939. No family history. No history of symptoms or physical findings suggestive of syphilis. Entered hospital with acute otitis media. Temperature 103°.

Serologic tests:

Blood serum, Kahn 4 plus.

Spinal fluid, Kolmer and Kahn negative.

Blood serum and spinal serology of mother and father negative.

Blood serum serology of siblings negative (2).

Final serology on patient negative.

Repeated serology over following year negative.

Treatment: 9 arsenical, 27 bismuth.

Case inadequately followed. Complete data (dates and number of serologic tests) not available. Private case.

Case 12. E. P., 8 yrs. Female. 1939. No family history. No history of symptoms of physical findings suggestive of syphilis. Fractured skull 1936. No complaint other than mental retardation.

Serologic tests:

Blood serum, 2/1/39, Kahn and Kline 4 plus.

Blood serum, 2/6/39, Kahn and Kline 4 plus.

Blood serum, 3/2/40, Doubtful (State lab.)

Blood serum, 8/24/40, Kahn negative, Kline 1 plus.

Spinal, 6/12/40, Kolmer and Kahn neg. Cells and protein normal.

No treatment given. Serologic status of parents not known.

Case 13. R. S., 18 mos. Male. No family history of syphilis. No history of symptoms of physical findings suggestive of syphilis. Entered hospital with acute suppurative otitis media. Temperature 103°.

Serologic tests:

Blood serum, 11/7/40, Kahn and Kline 4 plus.

Blood serum, 11/8/40, Kahn and Kline 4 plus.

Spinal not done.

Serologies of mother, father and siblings negative.

No treatment instituted. Case inadequately followed.

Case 14. M. F., 18 mos. Male. No family history. No history of symptoms or physical findings suggestive of syphilis. Entered hospital with diagnosis of malnutrition and nutritional anemia. Roentgenograms of long bones for evidence of congenital syphilis negative.

Serologic tests:

Blood serum, 7/13/40, Kahn and Kline doubtful.

Blood serum, 7/18/40, Kahn 3 plus, Kline 2 plus.

Blood serum, 7/22/40, Kahn 3 plus, Kline 1 plus (checked 2X).

Spinal serology not done.

Parents' serology negative on 7/23/40. Siblings in good health.

No treatment given. Case inadequately followed.

Case 15. D. R., 8 yrs. Female. No history of symptoms of physical findings suggestive of congenital syphilis. Family history negative. Entered hospital on several occasions with acute rheumatic fever, acute gastroenteritis and Sydenham's chorea.

Serologic tests:

Blood serum, 7/11/39, Kahn and Kolmer negative.

Blood serum, 12/15/39, Kahn 1 plus, Kline 4 plus.

Blood serum, 12/18/39, Positive (State lab.).

Blood serum, 12/19/39, Kahn 2 plus, Kline 3 plus (checked 2X).

Blood serum, 1/9/40, doubtful.

Blood serum, 2/6/40, Kahn negative, Kline 3 plus (checked 2X).

Spinal serology not obtained.

Mother's serology negative on 2/6/40.

No treatment. Case inadequately followed.

Case 16. R. F., 6 yrs. Male. Referred to the hospital with history of chills and fever and of previous rat bite. Organism of rat bite fever recovered from guinea pig inoculation.

Serologic tests:

Blood serum, 4/26/40, Kahn and Kline 4 plus.

Blood serum, 6/4/40, Kahn and Kline negative.

Treatment: Neoarsphenamine.

Case 17. M. H., 6 yrs. Female. Negative family history. Birth and development normal. Entered hospital with history of fall to cement pavement 3 mos. previously with injury to right parietal area. First convulsion day before entrance on 1/7/41. Diagnosis: Posttraumatic epilepsy.

Serologic tests:

Blood serum, 1/8/41, Positive.

Blood serum, 1/10/41, Positive. Checked 2X. When serum allowed to stand 24 hrs. and reinactivate is doubtful.

Blood serum, 1/14/41, Kahn 1 plus. Checked 2X. Kline and Kolmer negative.

Spinal, 1/9/41, Negative Kahn, Kolmer and Lange curve.

Case 18. B. M., 6 yrs. Female. Normal birth and development. No family history of syphilis. Family history of allergy. Entered hospital with diagnosis of gastrointestinal allergy.

Serologic tests:

Blood serum, 12/12/40, Kahn and Kline 3 plus. Serum becomes negative on standing 48 hrs.

Blood serum, 12/13/40, Kahn and Kline 3 plus. Serum becomes negative on standing 48 hrs.

Blood serum, 12/19/40, Kahn and Kline negative.

Typhoid, paratyphoid, Brucella abortus agglutination tests and Paul-Bunnell test negative.

SUMMARY

Eighteen cases of presumably biologic false positive tests for syphilis, occurring between 1930 and 1941, are reviewed. Sixteen of these occurred between 1938 and 1941. Only two were found between 1930 and 1937. Between 1930 and 1941 there were 128 cases of diagnosed congenital syphilis with positive serologic tests admitted to Doernbecher Hospital or to the Pediatric Outpatient Clinic. During the same period of time there occurred eighteen cases with positive serologies which represent probably biologic false positives. Between the years 1938 and 1941, thirty-six new cases of congenital syphilis were admitted. In this same period there occurred fifteen cases of probable biologic false positive reactions.

A summary of twelve fever cases giving positive serology is:

Acute suppurative otitis media, 4.
Streptococcic septicemia, 1.
Meningococcic meningitis, 1.
Cellulitis and furuncle, 1.
Pneumonia and bronchiectasis, 1.
Acute appendicitis, 1.
Paratyphoid "B," 1.
Gastrointestinal allergy, 1.
Rat-bite fever, 1.

Other diagnoses included pulmonary tuberculosis, 1 case; nutritional anemia, 1 case; posttraumatic epilepsy, 1 case.

Two children showed an unusual type of serologic response; one, posttraumatic epilepsy; the other, gastrointestinal allergy. The serum of both gave positive reactions when first tested but, when allowed to stand forty-eight hours and reactivated, displayed consistently negative reactions. No explanation is offered for the mechanism of this phenomenon.

The duration of the positive or doubtful tests in the above children showing a febrile reaction varied from two to as much as 234 days; and in the febrile cases, six to 420 days. Accurate conclusions cannot be drawn from these figures because of the great variability of the febrile responses and the infrequence of serologic checkups in many of the cases.

Only four cases received any form of treatment. None received what today is considered adequate antisyphilitic therapy.

The standard serologic tests of Kolmer, Kahn and Kline were used. Many were sent to the State Public Health Laboratory to be checked. Several came into the Clinic or Hospital with a history of positive reactions having been obtained at various laboratories in the state.

CONCLUSIONS

There is a greater number of false positive reactions in recent years which may be due to the increased sensitivity and lessened specificity of the newer flocculation and precipitation tests.

Most often, in children, a false biologic positive is associated with an acute infectious process with an elevation of temperature. Because of this it would be advisable to wait for a normal temperature before doing serologies.

It is entirely conceivable that, because of the nonspecific nature of the serum tests, pathologic processes other than the spirochetal diseases can liberate a reaginlike substance which will give false positive reactions. Conditions reported as most commonly doing this are leprosy, malaria, infectious mononucleosis, trypanosomiasis, septicemia, scarlet fever, tuberculosis, jaundice, acute febrile conditions of varying nature, diabetes and vericella. Also, it has been shown that biologic false positives occur in a certain small percentage of perfectly normal individuals showing no evidence of the presence of any infectious process.

Before a label of syphilis be placed upon any child, and more important, before treatment be instituted, care should be taken to establish a definite diagnosis as:

a. Positive physical findings in the child.

b. Definite history from either of the parents.

c. In the absence of the above, the serologic tests should be persistently positive over a period of several weeks and should be checked by several different methods by different laboratories. The practice of beginning treatment on the sole basis of two, three or even four positive tests is to be condemned. The value of the spinal serologic tests as confirmatory evidence is recognized, but false positive reactions can occur with the spinal fluid.

d. The presence of one of the more common diseases known frequently to cause false positive reactions, such as malaria, and especially infectious mononucleosis, should be ruled out by the proper laboratory procedures.

e. The use of Kahn's "verification test" might prove to be of aid in segregating the false from the true positives.

The value of the various serologic tests used to diagnose syphilis is not questioned in this paper. We only wish to bring out that the diagnosis must be substantiated by further investigation so that the label of syphilis is not placed on an innocent victim. Needless to say, the social and psychologic implications in syphilis of childhood should cause one to stop, look and listen, whenever a positive serology in childhood is obtained.

INFECTIOUS RELAPSE IN SYPHILIS*

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Infectious relapse in syphilis is of great importance from the public health viewpoint. As is true in certain other aspects of this disease, the frequency of relapse cannot be determined with accuracy, since lack of cooperation and relapse are closely associated. Due to the comparative insignificance of mucocutaneous relapse lesions, their occurrence must pass unnoticed more frequently than not. The all too frequent instances of transmission of infection after "cure" was apparent is evidence that infectious lesions may be entirely hidden from detection. Therefore, we can only speculate on the actual incidence of this complication, and undoubtedly it is more frequent than any statistical studies would indicate. Relapse is defined in this study as any mucocutaneous recurrence of acute syphilis which appears after the institution of antisyphilitic therapy. Recurrences in untreated cases are excluded.

CLINICAL MATERIAL

For this study eighty cases were selected as being satisfactory examples of infectious relapse. None of these cases fulfilled even the minimum criteria of reinfection.[1] Not all of the cases were treated at Vanderbilt University Hospital Clinic from the onset of infection but all were observed in the stage of relapse. Those cases with questionable histories antedating their first appearance at the clinic were omitted from this study.

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This study was carried out at the suggestion of and under the direction of Dr. R. H. Kampmeier, Chief of the Syphilis Clinic.

[1] Stokes, J. H., Cole, H. N., Moore, J. E., O'Leary, P. A., Parran, T., Jr. and Wile, U. J.: Cutaneous and Mucosal Relapse in Early Syphilis and its Differentiation from Reinfection, Ven. Dis. Inf. 12:55-66, Feb., 1931.

The sex, color and original diagnosis in this group of eighty cases is shown in table 1. White males constituted 39 per cent of these patients, white females 31 per cent, negro males 20 per cent, negro females 10 per cent. The overwhelming preponderance of whites (70 per cent) in a clientele where the ratio of whites to negroes is 1:2 forces one to the conclusion that the low index of suspicion and phlegmatic attitude of the southern negro is responsible for this discrepancy in the racial incidence of infectious relapse.

TABLE 1

STAGE OF SYPHILITIC INFECTION AT TIME OF ORIGINAL DIAGNOSIS IN 81 CASES OF INFECTIOUS RELAPSE

Color and Sex	Number of Cases	Sero-Negative Primary (2.5 per cent)	Sero-positive Primary (40 per cent)	Secondary (55 percent)	Latent (2.5 per cent)	Per cent
White Male	32	1	21	10	0	39
White Female	25	0	3	21	1	31
Colored Male	16	1	8	7	0	20
Colored Female	9	0	0	7	1	10
Total	81	2	32	45	2	100

The original diagnoses in the relapse cases were: primary syphilis in 42.5 per cent, secondary syphilis in 55 per cent and latent syphilis in 2.5 per cent. Classification of total number of admissions to the clinic is not complete but data over a seven year period clearly indicate that the highest percentage of relapse occurs in the primary cases. Incidence is decreased slightly in secondary cases and markedly so in latent cases. These facts agree with the findings of the Clinical Cooperative Group and are compatible with the theory that relapse decreases as tissue immunity increases. In this series of cases 89 per cent relapsed only once, 9.6 per cent twice, and 1.4 per cent three times.

CHARACTERISTICS OF RELAPSE LESIONS

The sites of relapse were the skin, genitalia and oral mucous membranes. Localization data were adequate in 77 cases. In 53 or 70 per cent only one site was involved. The skin was involved in 38 per cent, genitalia in 23.4 per cent and oral mucous membrane in 7.8 per cent. The remaining 24 cases showed involvement of more than one site. Genitalia and mucous membrane were both involved in 10.4 per cent, skin and mucous membrane in 7.8 per cent, skin and genitalia in 7.8 per cent, and all three sites in the remaining 5.2 per cent. Thus it can be seen that 62 per cent of these cases were potentially infectious by virtue of the site of the lesions (table 2).

Of 50 cases showing skin lesions, 20 (40 per cent) were papular, 17 (34 per cent) annular (circinate), 7 (14 per cent) maculopapular, 4 (8 per cent) macular, and 2 (4 per cent) pustular. This indicates that the annular type of lesion is more common in relapse than in the original secondary eruption.

Fifteen of the patients had been observed in the Vanderbilt University Hospital Clinic during the original secondary eruption and again with the relapse. In only one instance were the relapse manifestations similar to the original secondary eruption in location and extent. Relapse lesions were more extensive than the original eruption in another patient. In three patients the relapse lesions were about as numerous as in the original secondary stage but appeared in different sites. Relapse lesions were definitely less extensive than the original secondary eruption in the remaining ten patients. In several instances a solitary lesion constituted the relapse and occasionally appeared so trivial that a positive darkfield examination was a distinct surprise to the observer.

TABLE 2

DISTRIBUTION OF RELAPSE LESIONS

(77 Cases)

Single Manifestation (70 per cent)	*Skin*		*Mucous Membrane*		*Genitalia*			
	No.	*Per Cent*	*No.*	*Per Cent*	*No.*	*Per Cent*		
	29	37.7	6	7.8	18	23.4		
Multiple Manifestations (30 per cent)	*Skin—Mucous Membrane Genitalia*		*Skin Genitalia*		*Skin Mucous Membrane*		*Genitalia Mucous Membrane*	
	No.	*Per Cent*	*No.*	*Per Cent*	*No.*	*Per Cent*	*No.*	*Per Cent*
	4	5.2	6	7.8	6	7.8	8	10.4

Treponema pallida were demonstrated in 75 per cent of the cases, where lesions were present which were suitable for darkfield examination.

SEROLOGIC FINDINGS

The eighty cases were divided into three groups on the basis of serologic findings. There were fifty-five patients who remained Wassermann-fast throughout treatment. Some of these cases had serologic tests so infrequently that temporary reversal may have occurred between tests, but in the absence of specific proof these cases have all been classified as Wassermann-fast. The second group contained twenty-one cases in which the Wassermann and Kahn tests definitely became negative under treatment and relapsed to a positive reaction coincidental with the clinical relapse. A few of these cases showed very early Wassermann reversal under treatment, but the number was too small to be statistically significant. In the remaining four cases the serologic tests for syphilis were only partially positive at the time of relapse. One case had a doubtful Wassermann and positive Kahn test, another a negative Wassermann and positive Kahn test, another a negative Wassermann and doubtful Kahn reaction, and the fourth had a doubtful Kahn test (Wassermann test was omitted).

Thus no case in this series presented itself with entirely negative Wassermann and Kahn reactions at the time of the clinical relapse. This fact is at variance with the Clinical Cooperative Group study in 1931, in which 13 per cent of their cases were found to be seronegative at the time of relapse. Since their case reports extend back to the days of less sensitive serologic tests, it is likely that this high incidence of seronegative relapse has decreased considerably with the development of the precipitation tests. In a series of fifty-six relapse cases Stokes[2] in 1931 found 98 per cent seropositive. Certainly in our experience, the serology of infectious relapse is identical with that of secondary syphilis. It seems probable that the four cases in this series having a negative or doubtful test in either complement fixation or precipitation tests may be explained on the basis of technical errors.

TIME AND TREATMENT FACTORS IN RELAPSE

Seventy-two of the cases had data complete enough for an evaluation of the time and treatment factors in infectious relapse (table 3). Sixty of these were considered to have inadequate treatment, i.e., less than twenty injections of an arsenical with a corresponding amount of heavy metal (Stokes and his collaborators[3] found a 15 per cent incidence of relapse in patients receiving less than twenty arsenical injections and only 2 per cent in patients receiving more than twenty. Of Vanderbilt University Hospital cases 18.3 per cent relapsed in the first six months of infection, and 30 per cent more in the second six months, making a total of 48.3 per cent within the first year. By the end of the second year after infection 80 per cent had relapsed. In the third year 10 per cent more relapsed. These figures are in rather close agreement with those published by the Clinical Cooperative Group and by Moore[4] and others in similar studies.

The twelve cases receiving adequate treatment (twenty or more arsenicals with a corresponding amount of heavy metal) relapsed at much longer intervals after the onset of infection. None of these cases relapsed in the first year of infection, only one in the second year, four in the third year, and the remaining seven between the third and eighth year. Thus it seems that the few relapses that do occur in adequately treated cases are apt to be delayed well beyond the average time interval[5].

Of the entire seventy-two relapses approximately one-third occurred less than six months after last treatment and two-thirds relapsed within a year after cessation of treatment. Only 17 per cent relapsed more than two years after discontinuing therapy.

One case in this series relapsed seven years and nine months after the onset of infection. It is of sufficient interest to justify a case report.

TABLE 3

RELATION OF AMOUNT AND REGULARITY OF ARSENICAL TREATMENT TO RELAPSE AND TIME INTERVAL BETWEEN ONSET OF INFECTION AND RELAPSE

(72 Cases)

No. of Arsenic	*Per cent of Total Cases*		*Type of Treatment*	*1-5 Mos.*	*6-11 Mos.*	*12-23 Mos.*	*24-35 Mos.*	*3-8 Yrs.*	*No. of Cases*
1-4	17.7	15.0	Regular	3	3	4	0	1	11
		2.7	Irregular	0	1	1	0	0	2
5-9	35.5	30.0	Regular	5	8	5	2	1	21
		5.5	Irregular	1	1	1	0	1	4
10-14	23.4	11.1	Regular	1	2	2	2	1	8
		12.3	Irregular	1	1	3	2	2	9
15-19	6.9	5.5	Regular	0	1	3	0	0	4
		1.4	Irregular	0	1	0	0	0	1
20-40	16.4	4.1	Regular	0	0	0	2	1	3
		12.3	Irregular	0	0	1	2	6	9

Case 1, I. D., a 22 year old negro male, entered Vanderbilt University Hospital Clinic on September 11, 1928, with a seronegative, darkfield positive penile lesion of two weeks duration. He received two weekly injections of 0.4 Gm. of arsphenamine. After a lapse of one month he returned for a third arsphenamine injection. At this time the serologic tests for syphilis were still negative.

He disappeared for fifteen months and then returned with a recurrence of his penile lesion. No darkfield examination was done on this visit but the serologic reactions had become positive. He received neoarsphenamine 0.6 Gm. and mercury salicylate ½ gr. on that visit and failed to return for an interval of five years. On return he had another penile lesion. This time he took four injections of arsphenamine 0.3 Gm. and seven injections of bismuth salicylate gr. 2. One year later he returned with a darkfield positive anal condylomata. The date of this visit was June 11, 1936, seven years and nine months after infection.

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[2] Stokes, J. H., Besancon, J. H. and Schoch, A. G.: Infectious Recurrence and Mucocutaneous Relapse in Syphilis,, J. A. M. A. 96:344-351, Jan 31, 1931.

[3] Stokes, J. H., Cole, H. N., Moore, J. E., O'Leary, P. Syphilis, Ven. Dis. Inf. 13:253, July 20, 1932. A., Wile, U. J., Parran, T., Jr. and Usilton, Lida J.: Cooperative Clinical Studies in Treatment of Syphilis; Early

[4] Moore, J. E.: Modern Treatment of Syphilis, C. C. Thomas Publishing Co., Springfield, Ill., 1933.

[5] Pariser, H.: Infectious Relapse in Syphilis of more than Two Years Duration, J. A. M. A. 113:1206-1208, Sept. 23, 1939.

Numerous observers have noted that increasing amounts of arsenical treatment are associated with a decreasing incidence of relapse. In this series of 72 cases (table 3) 13 (18 per cent) received 1-4 arsenical injections; 25 (34.7 per cent) from 5-9 injections; 17 (23.6 per cent) 10-14 injections; 5 (7 per cent) 15-19 injections, and 12 (16.7 per cent) 20-40 injections. The first and last groups in this series do not conform to the expected ratio between treatment and relapse but perhaps these discrepancies can be explained. The group receiving only 1-4 arsenical injections obviously is composed of uncooperative individuals who failed to realize the gravity of syphilitic infection. Undoubtedly many relapses in this type of patient are never seen by the physician. Likewise, 1-4 arsenicals may not be enough to alter the natural development of immunity which tends to prevent relapse.

The group receiving 20-40 arsenicals undoubtedly had an adequate conception of the nature and course of syphilitic infection and probably were more cognizant of relapse manifestations than the average syphilitic. Also these patients were practically the only ones who returned for regular checkup examinations following probation. These facts are undoubtedly responsible for the higher incidence of relapse among those receiving 20-40 than among those receiving 15-19 injections of an arsenical.

TABLE 4

DURATION OF SYPHILITIC INFECTION BEFORE ORIGINAL TREATMENT

(51 Cases of Relapse)

Stage of disease at beginning of treatment	*Less than 1 Wk.*	*7-13 Days*	*14-20 Days*	*21-27 Days*	*1 Mo. plus*	*2 Mos. plus*	*3 Mos. plus*	*4 Mos. plus*	*5 Mos. plus*	*6 Mos. plus*
Primary—(23 Cases)	4	5	2	5	5	2	0	0	0	0
Secondary—(28 Cases)	0	9	0	0	9	3	3	2	1	1
	Under 1 month (25 cases)				Over 1 month (26 cases)					

An effort was made to correlate the relationship of regularity of treatment to infectious relapse. Irregular treatment is defined here as less than 75 per cent of the treatment considered adequate for a given time interval. Also, all cases showing a treatment lapse of three or more consecutive weeks were considered irregular. In cases receiving less than twenty arsenical injections, regular treatment apparently was no more effective than irregular but in those receiving more than twenty injections irregularity of treatment was found in 75 per cent of those cases developing relapse.

Two cases relapsed in the midst of courses of an arsenical in which inadequate dosage was being used. In both of these the relapse lesions were exceedingly bizarre in morphology. Another case was apparently drug resistant, relapsing under neoarsphenamine therapy but responding rapidly to arsphenamine.

Fifty-one cases were analyzed with respect to the duration of infection before treatment was begun (table 4). The stage of the infection was not considered. In twenty-five relapses, infection had been present less than one month before treatment was begun. Therefore, if one month is taken as the division point between prompt and delayed treatment, there seems to be no significant difference in the above findings in regard to predisposition to relapse.

RELAPSE FOLLOWING SUPPOSEDLY ADEQUATE TREATMENT

Occasionally infectious lesions appear in patients who have completed a course of treatment which is generally considered to be adequate for the clinical cure of syphilis. These cases constitute one of the most discouraging complications of syphilotherapy. Three such cases occurred in this series.

Case 2, W. C. M., white male, age 42. Developed a chancre in January, 1938. Beginning in April, he received seven weekly injections of neoarsphenamine from a private doctor before being referred to Vanderbilt University Hospital Clinic. On first visit to the clinic his Wassermann and Kahn tests were found to be positive and he was continued on antisyphilitic therapy. He missed six weeks treatment in July and August on account of a herniorrhaphy. Following this he took fifty-eight consecutive injections in fifty-eight weeks. The Wassermann and Kahn tests reversed after three months treatment and remained negative throughout therapy. Thus he received a total of thirty-three injections of neoarsphenamine (Gm. 0.6) and thirty-four of bismuth salicylate (gr. 2) in eighteen months.

He was placed on probation in October, 1939. He returned January 5, 1940, for check-up examination. Serologic and physical examinations were negative at this visit. On May 31 he returned for another routine examination. Physical examination was negative but Wassermann and Kahn tests were positive. One week later, before he returned for a report on his serology, a slightly raised annular lesion about the size of a dime appeared on the inner surface of his thigh. Numerous treponema pallida were demonstrated in this lesion.

Case 3. T. F., negro female, age 16. Entered the clinic October 26, 1937, with secondary syphilis of one week duration. She was begun on routine continuous treatment which she took very faithfully, missing only two visits during a period of sixty-five weeks. Her Wassermann and Kahn tests reversed three months after treatment was begun and remained negative throughout treatment. After receiving thirty-two injections of arsphenamine (Gm. 0.3) and thirty-one of bismuth salicylate (gr. 2) she was placed on probation January 1, 1939. In March and July of 1939 and in January, 1940, routine blood tests and physical examinations were negative. On March 7, 1940, she returned with annular lesions on the face and genital condylomata which revealed treponema pallida on dark-field examination. Wassermann and Kahn tests were both positive.

Case 4. W. D., white male, aged 29. Entered the clinic in May, 1938, with a seropositive, darkfield positive chancre. He received thirty-four neoarsphenamine injections (Gm. 0.6) and thirty-six bismuth salicylate (gr. 2) by the continuous method of treatment which he took very regularly. His blood tests became negative in three months and remained consistently so throughout therapy. He was placed on probation toward the end of 1939. He returned in November, 1940, for follow-up examination and was found to have negative Wassermann and Kahn tests and no physical manifestations of syphilis. One month later he returned with a monorecidive on the penis which was darkfield positive. Wassermann and Kahn tests had both reverted to positive.

In case 2 there was a six weeks lapse early in treatment which might have been responsible for the poor result, although it was followed by more than a year of intensive treatment. In case 3 there seems to be no apparent flaw in the treatment. This case evidently belongs in the irreducible minimum of bad results encountered in syphilotherapy. Case 4 is slightly suggestive of reinfection but fails to comply with several important criteria of reinfection. The relapse lesion involved exactly the same area as the original chancre and the period of probation only lasted a year. These cases illustrate the necessity for continued observation of patients after completion of routine syphilotherapy.

CONCLUSIONS

1. Relapse occurs most frequently in patients whose treatment is begun in the primary stage of infection, slightly less frequently when treatment is begun in the secondary stage, and extremely infrequently when it is begun in the latent stage.

2. Two-thirds of the patients developing mucocutaneous relapse have lesions at sites which are particularly favorable for transmission of infection.

3. Relapse is characterized by paucity of lesions. The latter are usually papular or annular in type.

4. Serologic tests for syphilis are positive in practically 100 per cent of relapse cases.

5. Eighty per cent of recurrent lesions (relapse) develop in the first two years of infection, if treatment is suboptimal. If optimal treatment is given, relapse may be delayed beyond the usual time. Two-thirds of the cases of relapse occur within one year after treatment ceases.

6. As a rule, the frequency of relapse decreases as the number of arsenical injections increases. Irregularity of treatment does not seem to be an important factor in relapse, when treatment is definitely inadequate, but irregularity may be blamed for 75 per cent of infectious relapses that occur after twenty or more arsenical injections.

7. The accepted standard of adequate treatment will not prevent infectious relapse in all cases.

TREATMENT OF CHRONIC ULCERATIVE COLITIS BASED ON THIRTY CASES*

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We consider chronic ulcerative colitis to be a distinct disease without exact known etiology and with a largely unpredictable prognosis. While the ulcerative process usually begins low in the rectum and spreads upward, this is not invariable. Rarely does ulceration extend above the ileocecal valve. Frequently the disease is associated with nutritional enteritis,[1] and also frequently the initial biologic damage to the colon was given by amebic or bacillary dysentery.

Predisposing or even at times directly causative factors may be found in underlying nutritional deficiency which lowers the resistance of the colonic wall against secondary bacterial invasion of diverse sorts. This deficiency seems to be concerned with insufficient vitamins especially of the B complex. The role of vitamin A in promoting resistance of epithelial tissues to bacterial infection has not been assessed in this disease. The same may be said for the poor absorption in the small bowel of dextrose, digested fat, calcium, phosphorus and vitamins, characteristic of nutritional enteritis. Frequent association of allergic and psychologic phenomena may be related either to cause or effect but needs always to be kept in mind with reference to prognosis and treatment. In general, chronic ulcerative colitis may show all variations from a single, relatively mild attack to severe progressive malignant ulcerations, second in seriousness only to cancer.

Diagnosis of chronic ulcerative colitis requires the presence of blood, exudative elements and mucus in the stools, demonstrated ulceration and elimination of known specific causes for a similar syndrome. Confirmatory factors are chronicity, tendency to relapse, presence of nutritional enteritis and continued absence of discoverable specific causes. The disease must be separated particularly from amebic and bacillary dysentery, lymphogranuloma and various forms of functional colitis.

The relation of chronic ulcerative colitis to bacterial infection was studied in thirty-five cases,[2] and the conclusion reached that, aside from Endameba histolytica, dysentery bacilli and hemolytic Beta streptococci, there is "a large residuum of cases which indeed may yet prove to include all above, in which a primary biologic damage has been done to the colon, most likely by a food deficiency, by congenital conditions which are poorly, if at all, understood, or by a preceding severe infection.

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*From Division of Preventive Medicine and Department of Medicince, University of California Medical School.

[1] Reed, A. C.: Nutritional Enteritis, to be published.

[2] Reed, A. C.: Chronic Ulcerative Colitis, California & West. Med., 50:402, June, 1939; 51:32, July, 1939.

"Secondary to this primary damage the colonic wall is invaded by a heterogeneous mixture of bacteria, both harmless and pathogenic, whose selection depends on what is available in the contiguous colonic lumen." We have found in our own experience no evidence leading us to except from this general conclusion the diplococcus described by Bargen and his group, or the B. necrophorum studied by Dack and his associates.

The pathology of chronic ulcerative colitis begins as a superficial inflammation of the mucosa, spreads deeper, involving primarily the submucosa, leads to necrosis and superficial ulcers. These may eventually penetrate deeply. The entire mucosa appears abnormal as seen with the sigmoidoscope. The early appearance is of an angry red, ground-glass surface which bleeds easily under the swab. The area between ulcers is thus subject to inflammation and ready to break down, leaving islands and tags of mucosa and often a pseudopolyposis. In the great majority of patients, the process begins inside the rectal sphincters and tends to spread upward. In a few it is limited to the rectosigmoid, cecal or other locality, giving a true regional ulcerative colitis. The colonic lumen tends to be narrowed, haustrations are lost and the wall tends to thicken.

The nature of this pathology, briefly summarized here, shows why complications and sequels are numerous and formidable. The diseased colon acts as a major focus of infection, while pseudopolyposis, stenosis, perforation and hemorrhage are among a long list.

Since the report of intensive bacteriologic study of thirty-five cases of chronic ulcerative colitis already noted, we have seen thirty cases which can be summarized briefly as follows:

SUMMARY OF 30 CASES

M. 21, F. 9.

Age Under 20	4
21-30	7
31-40	13
41-50	3
Over 50	3

Duration when first seen, one month to 25 years.
Average duration 5.5 years.
Chief symptoms

Dysentery	24
Diarrhea	6
Extreme pain	5
Nausea	1
Hysteria	1
Malnutrition	1
Constipation	2

Diagnosis. Chronic ulcerative colitis alone in 18.
In 12 associated with, hypothyroidism (2), alcoholism, pyorrhea, malnutrition, achylia (4), notable avitaminosis (3), allergy, polyposis (2), visceroptosis.
Stools in all were dysenteric with exudative elements prominent.
Anemia of secondary type was present in 13 of 30 cases. In 3 of these 13 it was of marked severity.
Hemorrhage was present in all and of serious severity in 9.
Amebiasis preceded chronic ulcerative colitis in 7 of 30, (23.3 per cent).
B. dysenteriae was recovered in none.
Fever of varying degree was present in 9 of 30.
Nausea was present in 10 of 30.
Notable loss of weight was present in 20 of 30.

PRINCIPLES OF TREATMENT

In discussion of treatment we present results of our own experience alone. We omit many procedures recommended, but which in our experience have been useless. For instance, we have abandoned the use of vaccines, after careful trial of several types. In general, also, colonic irrigations are not used as they increase irritation and have not proved beneficial. The exception to this last statement is in cases with ileostomy which will be mentioned later. The complicated, overlapping and poorly understood etiology has led to promulgation of numerous methods of treatment, usually based either on misunderstanding of the pathogenesis, or else on a purely empyrical base not substantiated by longer and more objective observation.

In general, treatment can be divided under three major heads:

1. *Curative,* aimed at specific causes. This assumes that a specific cause is to be found and in such cases the diagnosis of chronic ulcerative colitis, of course, is no longer tenable. However, our idea of the pathogensis of chronic ulcerative colitis is of a fairly uniform inflammatory and ulcerative process, largely of indeterminable prognosis, at least associated with vitamin deficiencies and often with neurologic or psychologic states and actively maintained by essentially secondary bacterial infection. Attention to these underlying conditions, whether they are actually primary or secondary, may well be included under curative and preventive treatment.

We have used sulfaguanidine in one serious case after ileostomy by thrice daily flooding the disconnected colon with 200 cc. saline containing 4.0 grams of the drug. In twelve days there was no change in temperature or clinical picture. After a two weeks interim, one such irrigation was given each morning and an irrigation each evening with 1:3000 neutral acriflavine. Coincidentally the temperature came to normal, has remained normal and the patient has made remarkable symptomatic improvement. This case will be the subject of a separate report.

In general, we use neutral acriflavine, 500 cc. of 1:3000 solution, in ileostomy cases daily with apparent benefit. The benefit has been transient or absent in cases without ileostomy.

2. *Local, topical or protective treatment.* This includes the use of bland diet, astringents and protectives which are used as a general method and not for symptomatic purposes.

3. *Symptomatic treatment.* Procedures in this category which we have found beneficial will be listed below. They refer to such clinical phenomena as anemia, hemorrhage, fever, local symptoms and pain.

PRACTICAL TREATMENT

1. *The mental state* of the patient is of primary importance. Tense, apprehensive, introspective and worried patients are more subject to the disease and control of these factors promotes improvement and facilitates recovery. Anxiety states and lifelong personality traits of this character are difficult, sometimes impossible to remove. But the effort is always necessary and beneficial in proportion to its success. The temperament so often associated with general allergic sensitivity is most inimical in this disease. True psychotherapy is necessary but psychoanalysis is detrimental. A cheerful understanding of the problem and willingness to face the situation with a rational way of living on a long-term basis, adjusted to physiologic needs, are essential. Anxiety states must be eradicated so far as possible and will tax the ingenuity and patience of the physician. He must have a detailed factual acquaintance with the mental and psychologic make-up of the patient and be able gradually to lead him to a realistic and confident attitude.

2. *The usual underlying nutritional deficiencies* must be corrected by diet and dietary supplements. It is to be remembered that nutritional enteritis with its differential changes in small intestinal absorption is usually present to some degree. Modified by individual requirements of specific sensitizations or dislikes, the diet should have the following features:

a. High protein, based primarily on gelatin, lean meats, eggs and milk. Often goat's milk will be assimilated when cow's milk is not suitable.

b. The quantity of fat should be proportioned to the frequency and character of the stools. Diarrhea and appearance of steatorrhea, or even appreciable amounts of digested fats, are indications for restriction of dietary fat. Butter fat is the most desirable form and should take precedence over vegetable and meat fats. While further loss of weight is always undesirable, rest of the absorptive function of the small intestine is necessary and prepares for increased caloric (fat) elements later on.

c. Carbohydrate must be sharply limited by complete exclusion of sugars and restriction of starchy foods such as breads, cereals, pastes and pastries. This, with high protein intake, is the main positive base of the diet. The dietary sources of carbohydrate should be limited chiefly to vegetables and proteins. Lacking specific sensitivities which always must take precedence, bananas, strawberries, papayas and persimmons are highly desirable. The availability of bananas has not been well explained. They must be thoroughly ripe or slowly baked. Banana flour is often a useful adjunct and lends variety. Sweetening is best supplied by saccharin, which should be added always at the time of eating, and never cooked with the food.

d. Roughage must be limited carefully, although purëeing is not usually necessary. Tender food well chewed answers in most cases. Stewed tender fruit, with no sugar, and raw tender fruits are often useful.

e. Spices, coffee and alcohol are strictly interdicted, although salt, tea, lemon and lime juices are allowed.

f. Calcium and phosphate supply must be large and is easily given in the form of dicalcium phosphate, 8 to 12 grams daily by mouth.

g. Vitamin intake must be excessively high. Vitamin A (not carotin) should total 50-100,000 units daily. Brewer's yeast tablets are given, three or four with each meal. In addition, thiamin hydrochloride is given, 50 to 100 mg. daily by vein, combined with 25 mg. vitamin C (ascorbic acid). Careful watch for cheilosis or phlyctenular conjunctivitis is necessary, and with the slightest suspicion of ariboflavinosis, 6 mg. of riboflavin are given daily by mouth. Some cases, because of anemia or severity of symptoms also receive liver extract. This is best given in the form of the old unconcentrated extract powder, 8-12 grams daily by mouth, or the unconcentrated old liquid extract, 5-10 cc. daily in the muscle. This latter method is more effective but may be contraindicated in emaciation or where soreness may interfere with sitting. Nicotinic acid is sometimes indicated in a dosage of 0.1 gram thrice daily, if there is even a suspicion of this deficiency.

3. *Local, topical or protective treatment* consists of the use of astringent albuminates, bismuth subcarbonate (never subnitrate) and kaolin by mouth in mixture with calcium powder, and the use of

instillations of 1 to 3 ounces of warm ½ to 1 per cent solution of tannic acid by rectum. We have used a few times instillation of 4 ounces of cod liver oil with no perceptible evidence of benefit. The barium used in roentgen examinations usually gives temporary protection in the colon and relief of symptoms.

4. *Symptomatic treatment* may be summarized under the following heads:

a. Hemorrhage of some degree was present in all of this series of cases and in nine was serious in itself. Mostly it follows ulceration associated with lowered vitamin C and prothrombin levels in the blood. Bile salts and vitamin K must be given in large amounts and results checked by repeated blood examination for vitamin C and prothrombin clotting time. Repeated transfusions are used, one of our cases having had a total of eighteen. Tannic acid instillations by rectum and astringents by mouth are frequently of definite benefit. Physical rest and physiologic rest of the colon must be secured. Hemorrhoidal bleeding is not uncommon. It is amenable to routine topical treatment.

b. Anemia was present in thirteen of thirty cases and in three was severe. Transfusion is most beneficial and iron can be given orally as iron and ammonium citrate, 0.5 grams, thrice daily. Vitamin C blood levels must be kept high.

c. Fever as a symptom needs no direct treatment. Control of secondary infection in the colonic wall is the point of attack.

d. Diarrhea and dysentery are treated by adequate rest, diet, high vitamin and mineral additions, astringents and protectives, and by temporary use of paregoric with or without belladonna. When gastric acid is low or absent, U. S. P. dilute hydrochloric acid is given in 4 cc. doses with each meal in milk, tomato, pineapple or sauerkraut juice.

e. Pain is usually typical colic and is best relieved by rest, belladonna, external heat and paregoric if necessary. We find it unnecessary and undesirable to use opiates rather than the small amount in compound tincture of camphor (paregoric) except in minimal amounts in urgent conditions. Since this is a chronic disease prone to relapse, such a rule is doubly important.

f. Nausea disappears with improvement in the colonic condition but can be relieved by alkalis, charged waters and ginger ale, bismuth, caroid extract and small frequent feedings. External heat and counterirritation aid materially.

g. Surgical treatment must be instituted at times for local relief of hemorrhoids, for paracolonic abscesses, polyps and other rarer complications. In direct treatment ileostomy must be considered seriously when (1) the patient gets worse in spite of the best possible medical regime, including emergencies with sepsis and hemorrhage, and (2) when the disease course has been long-continued without remission, but on a fairly level status. Outside of emergencies and as a life-saving resort, it is a matter of prognostic judgment as to when operative interference is justified. We favor ileostomy over any type of cecostomy as complete physiologic rest of the colon is more complete.

In the thirty cases here summarized, six were treated by ileostomy which in two cases was followed by two stage colectomy. One of the colectomized patients (D. B.) died, a boy of 16 with a malignant and hopeless course from the start. He had a fulminating infection of the colon with a blood loss of 50 per cent in eleven days, severe malnutrition and loss of colon haustra by roentgenography. The other (S. L.), a girl of 23 with chronic nonhealing colitis, was cured of all symptoms and is in normal health. She had lost 42 lbs. in weight in a period of five years. The distal half of the colon showed roentgen evidence of permanent injury, a finding confirmed after resection.

Two cases with ileostomy alone (G. C. and M. G.) are in normal health and restoration of continuity of the bowel will be delayed for a long time. The third case, (C. S.), with ileostomy alone, was referred to above (principles of treatment, 1). He has made a remarkable recovery from an urgently critical condition to complete freedom from symptoms (now five months after operation). Altogether, including this series, we have had colectomy performed on four patients with restoration to complete health in three and one death. In the fatal case, death seemed certain without operation and probably should not be charged to it.

We lack means of deciding the prognosis in early cases. This makes the decision regarding ileostomy and colectomy a matter of utmost difficulty. We cannot subscribe to the dictum that colectomy is always contraindicated in chronic ulcerative colitis in the face of three patients restored to normal health after many years of dangerous invalidism. However, the judgment is extremely difficult, the responsibility is heavy and it must be approached after a thorough and meticulous review of the entire history and reappraisal of the present status of the patient and his prognosis. Skillful and experienced surgery is absolutely necessary even in the case of ileostomy.

OUTLINE OF MANAGEMENT

The patient suspected of chronic ulcerative colitis must have a complete history and examination, with routine review of blood, urine and complement fixation. Six fresh stools should be examined for parasites, cytology, state of digestion, exudative elements and gross blood. Gastric analysis must be made. Sigmoidoscopic examination is necessary with bacterial culture both aerobic and anaerobic. Gastrointestional roentgenograms are necessary, including small intestine and barium enema. When the diagnosis of chronic ulcerative colitis has been substantiated, blood calcium and ascorbic acid, blood sugar tolerance or galactose tolerance, and if weight loss and diarrhea are prominent, basal metabolism should be estimated.

Treatment should be instituted at once, consisting of (1) strict diet, (2) vitamin supplement in excess of estimated needs, (3) adequate physical rest, and (4) astringent protective powders containing calcium phosphate.

If improvement is not consistent and progressive, additional symptomatic treatment must be added.

If in spite of a meticulous medical regime, after a period of weeks to months, there is no improvement, or in case the clinical condition becomes worse, ileostomy must be considered. This consideration invariably must include a complete reappraisal of history, personality, psychoneurologic and economic factors, examination and all laboratory data. The barium enema must always be repeated and compared with the first examination. The same is true of the sigmoidoscopic inspection. Consultation with a surgeon highly experienced in this disease is important.

In arriving at a decision, the physician must remember the strong tendency to relapse. Since relapse may come after an interval of several years even, the physician must be extremely cautious in dropping any elements of the regime when improvement begins and for a long time after. Cure can hardly be claimed until the patient has been free of symptoms for five years.

SUMMARY

An analysis is given of thirty patients with chronic ulcerative colitis. On the basis of this analysis and experience, in addition to thirty-five cases reported in 1939, treatment is discussed under the heads of curative, protective and symptomatic procedures. The difficulty of prognosis is emphasized and the importance of control of underlying predisposing factors.

CARE OF PARALYZED BLADDER SECONDARY TO SPINAL FRACTURES*

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It has been recognized for many years that the high mortality associated with traumatic myelitis, incident to spinal fractures, results from a disturbance in bladder function secondary to spinal cord damage. As a result of the spinal cord injury we see urinary retention, incontinence, urosepsis, stone formation; and it is these which cause the death of the patient and not the fracture of the vertebral body itself. While the treatment of the fracture is important, it is management of the bladder dysfunction which often determines the outcome. Proper care of these cases cannot be overestimated, particularly the early care. Correct management of these patients depends upon a clear understanding of certain fundamental principles.

Following spinal cord injury a period of so-called spinal shock results which is manifested in the urinary bladder by muscular atony with urinary retention and overflow incontinence. This period of bladder atony may last from a few days to many months, following which a more or less normal behavior pattern develops, depending upon the level and extent of the spinal cord injury.

In general, there are three types of bladder behavior following recovery from the period of spinal shock. The most common type of injury is a transecting lesion above the conus. In this type of lesion an automatic bladder results. In these cases bladder contraction is dependent upon a simple spinal reflex, and the bladder automatically empties itself whenever a certain point in distention is reached. The emptying of these bladders is not under volitional control.

If the lesion involves the conus, in the sacral portion of the cord, we have in addition to destruction of motor fibers, damage to sensory fibers as well and this bladder is completely denervated. Reflex emptying as well as voluntary is here abolished and there results a dribbling type of overflow incontinence with a large residual.

There is a third type seen in which the lesion of the cauda equina is less extensive and there is only a disturbance in sensory function. This is an atonic bladder analagous to the bladder seen in tabes dorsalis, with a constant dribbling type of overflow incontinence.

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*Read before a round table discussion on traumatic surgery, at Forty-ninth Annual Meeting of Idaho State Medical Association, Sun Valley, Idaho, June 19, 1941.

Treatment of these cases may be divided into two parts; during the period of spinal shock or immediate treatment, and treatment after a definite behavior pattern has developed. Upon the individual who first sees these cases rests the responsibility for proper management of the bladder dysfunction, since it is not possible for everyone to have immediate urologic consultation. Since the bladder of spinal shock is an atonic distended bladder with overflow incontinence, the first problem is one of providing adequate urinary drainage. If one knew that an automatic bladder, emptying itself completely, would soon develop, it would probably be wiser to do nothing in the way of providing drainage. However, many months may elapse before an automatic bladder is established, and in addition to the damaging effects of a greatly distended bladder, the nursing care of these patients is a serious problem.

In general, we may consider three methods for drainage of the bladder. They are (1) intermittent catheterization, (2) an indwelling urethral catheter, and (3) suprapubic cystotomy. Needless to say, one should not consider the passage of a urethral catheter into the bladder until it can be done under strictly aseptic conditions. The great majority of these cases can be transported to the hospital within a few hours and, until this is done, no attempt should be made to pass a catheter into the bladder.

Intermittent catheterization has the least to recommend it of any of the procedures. The bladder is not kept empty, and it is impossible to avoid infection in an atonic bladder which contains urine the greater part of the time. There is added also repeated trauma to a urethra whose nerve supply has been damaged. A bad state of affairs is only made worse by institution of a regime of intermittent catheterization.

Continuous bladder drainage by an indwelling urethral catheter has been recommended by some. This method is better than intermittent catherization. This procedure keeps the bladder empty at all times which is a prime requisite of any method.

Since the advent of the new, more efficient urinary antiseptics, it is now much easier to combat infection. The Munro[1] system of tidal irrigation has added a great deal to the method of closed urethral catheter drainage, in the opinion of some. However, it is a complicated procedure, requiring meticulous care in its operation, and its value as a general routine procedure remains to be proven.

The most valid contraindication to urethral catheter drainage is the question of urethral trauma. It must not be forgotten that such a catheter only drains the bladder and not the urethra. In fact, it further damages a urethra whose nerve supply has been destroyed. It has been reported that during the last war it was not uncommon to see widespread sloughing of periurethral and perineal tissues, exposing several inches of an indwelling catheter, in cases where this procedure was used.

Suprapubic cystotomy, done as soon as possible, answers all the requirements more completely than any other method of drainage. It is a simple procedure which can be performed under local anesthesia. Through a one inch skin incision a trocar is passed to the bladder, the obturator removed and through the sheath a Pezzar self-retaining catheter is passed into the bladder, and the sheath withdrawn. With such a tube in place the bladder can be kept empty continuously, the first requisite in the management of these patients. The care of such a tube is much more simple than that of an indwelling urethral catheter. Infection can be more adequately controlled as the tube provides much better drainage.

One should also make use of the modern urinary antiseptics in the control of infection. Their value is great, but no urinary antiseptic is of much value unless there is free drainage of urine. It is true that some sloughing may occur about the abdominal wound, but if this should occur, it is preferable to sloughing of the urethra and periurethral tissues.

Hinman has recently discussed the care at the front, of the paralyzed bladder, the result of spinal cord injuries. He recommends that all front line medical stations be equipped to perform suprapubic cystotomy; that such a procedure be performed immediately in case of the paralyzed bladder, without waiting until the patient can be transported to a base hospital.

It is not within the scope of this paper to discuss in detail the management of the paralyzed bladder following recovery from the period of spinal shock, and establishment of one of the behavior pattern types mentioned above. A certain small percentage of these cases may regain normal bladder function, providing the cord damage has not been permanent. In these cases there is nothing to do but remove the suprapubic tube and close the sinus. The methods to be used in the control of the remainder of the patients will depend upon the type of per-

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[1] Munro, D.: Cord Bladder, Definition, Treatment and Prognosis when Associated with Spinal Injuries. J. Urol. 36:710-729, Dec., 1936.

manent paralysis. At the best the lot of these unfortunate people is a sad one, and it may not be easy to decide as to which particular method of drainage is to be preferred. Permanent suprapubic drainage may result in a less miserable existence than prolonged training and care necessary to get along without mechanical drainage.

The reflex neurogenic bladder seen in transacting lesions above the conus is characterized by periodic, incontinent evacuation. The capacity of these bladders is usually 150 to 200 cc. However, infection or calculus formation may so increase the irritability of these bladders that incontinent evacuation may occur at much more frequent intervals. If these can be prevented, the more intelligent type of patient may so adapt himself to his automatic bladder that his difficulties are at least at a minimum.

The autonomous neurogenic bladder has been completely denervated and has no reflex activity. There is a hypertonic, internal sphincter which acts as an obstruction, with a resulting high residual and continuous overflow incontinence. By periodic manual suprapubic pressure and simultaneous straining, these patients may be able in time to empty their bladders with a fair degree of success, and thus control the continuous dribbling of urine. Nesbit[2] has attacked the bladder neck obstruction by transurethral resection in a number of these cases and reports some encouraging results. If satisfactory periodic evacuation cannot be obtained, suprapubic drainage is certainly preferable to a state of incontinence.

The atonic neurogenic bladder has a low intravesical pressure and a relaxed internal sphincter. Here there is also a large residual with dribbling incontinence. Since these patients have no bladder outlet obstruction from hypertrophied sphincter, it is possible for them to obtain more satisfactory emptying by suprapubic pressure and straining. However, if this cannot be obtained, permanent suprapubic drainage is again to be preferred.

While perhaps not directly concerned with the care of the paralyzed bladder, there is the problem of formation of urinary calculi in these patients. It is well known that the paralyzed individual tends frequently to form renal and vesical calculi. These stones tend to form rapidly without producing any symptoms and serious damage often results before they are discovered. Without discussing the etiology of renal calculi, suffice it to say that stone formation in these patients is mainly the result of high phosphaturia, limited fluid intake and poor drainage from long periods of recumbency. Phosphatic stones are the common type of stones seen, usually calcium phosphate. Boyd[3] has recently discussed this question of the formation of renal calculi in bedridden patients. He emphasizes particularly the importance of a high fluid intake and obtaining adequate renal drainage by proper posture. He advises having these patients spend certain hours each day lying face down, and drinking of large quantities of fluid before this position is assumed.

SUMMARY

1. Proper care of the paralyzed bladder is an important part of the management of cases with traumatic myelitis.

2. Early suprapubic cystotomy answers more satisfactorily the question of adequate drainage and urinary asepsis than any other procedure, particularly in the early stages; and often may be the most satisfactory procedure as a permanent method of bladder drainage.

3. Tendency of the paralyzed patient toward formation of renal calculi should always be kept in mind in the management of these cases.

203 Kettenbach Building.

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[2] Nesbit, R. M. and Gordon, W. G.: The Neurogenic Bladder. Pennsylvania, M. J., 43:1261, July, 1941.

[3] Boyd, M. L.: Formation of Renal Calculi in Bedridden Patients. J. A. M. A., 116:2245-2247, May 17, 1941.

INTERNATIONAL ASSEMBLY

This year's International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the public auditorium, Minneapolis, Minn., October 13-17. Hennepin County Medical Society will be host to the Assembly and has arranged an excellent list of committees who will function throughout the Assembly. A very cordial invitation is extended to all members of the profession in good standing to attend the Assembly. A full program of scientific and clinical sessions will take place each day and evening of the Assembly, starting at 8:00 o'clock in the morning.

Preassembly and postassembly clinics will be conducted, free of charge, in the Minneapolis hospitals on the Saturdays previous to, and following the Assembly, for visiting members of the profession. Excellent scientific and commercial exhibits of great interest to the medical profession will be an important part of the Assembly. These exhibits will be open to members of the medical profession in good standing without paying the registration fee.

ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

The forty-sixth annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held at the Palmer House, Chicago, October 19-23. The program consists of one general scientific meeting on the morning of the first day, separate programs for the two specialties on alternate afternoons and instructional courses every morning beginning on Tuesday. There will be various meetings of small groups, including the "Teachers' Section," secretaries of local eye, ear, nose and throat societies and alumni organizations. The meeting of the teachers' section will be concerned especially with the role of the Academy in national defense during the present emergency. Alternating with the scientific programs of the specialties each afternoon will be an elaborate motion picture program.

STILBESTEROL IN MENTAL MANIFESTATIONS OF THE MENOPAUSE*

N. K. Rickles, M.D.

SEATTLE, WASH.

I have been substituting stilbesterol*, a synthetic estrogenic hormone, for the natural estrones in treating the mental manifestations of the menopause. This synthetic hormone, stilbesterol, was described by Dodds and Lawson of England in 1938. The drug does not contain the phenanthrene ring, mother substance of the natural hormone and previously thought to be a prerequisite of estrogenic activity. Stilbene is obtained by treating benzaldehyde with benzl magnesium bromide and distilling it after acidifying with sulfuric acid. The dehydroxy diethylstilbestrol (stilbesterol) has proven the most effective estrogen of the group. Stilbesterol bears no chemical relation to the natural occuring estrogens, yet 1 mg of stilbesterol is equal to 25,000 international units of estrone.

In the three years since stilbesterol's introduction both laboratories and individual investigators have done a great deal of research to determine toxicity of this drug. It has been fairly conclusively demonstrated that no liver damage results and that the heart and kidneys are unaffected by the drug. Report of the Council of Pharmacy and Chemistry of the American Medical Association is as follows: "There is little evidence that stilbesterol is more toxic than other estrogens." All the investigation done has brought no evidence to light that it is any more dangerous to use than estrone. On the other hand it is five times more efficacious than estrone when administered orally. It has an advantage over injection therapy of natural estrones in that the oral mode of administration simplifies the problem of keeping a constant adequate estrogenic blood level and does away with the expense to the patient of prolonged administration and high dosages. Stilbesterol has been used with varying degrees of success in treatment of menopausal complaints, amenorrhea, ovarian hypofunction, and nausea of pregnancy.

My particular interest in stilbesterol was directed toward its effects on nervous and mental manifestations due to the menopause. In women who show definite psychotic and psychoneurotic trends and are at the same time suffering from the nervous irritability and mental depression which so often accompanies the other subjective symptoms of the menopause, there comes a need to differentiate between complaints that are menopausal in origin and those of a true psychotic nature.

In severe cases the subjective complaints of the menopause: headaches, hyperirritability, tenseness at the head and neck muscles, mental depression, feelings of self-pity, etc., can very closely approximate a true psychotic condition such as involutional melancholia. The best way that I have found to determine what has caused my patients' mental disturbance in cases of this type is to clear up symptoms due to the menopause by estrogenic therapy. When such symptoms as hot-flashes and chilly sensations were cleared by administering estrogens, yet the woman remained delusional and depressed her psychosis could hardly be dismissed as menopausal. Thus, an efficient estrogen becomes a valuable diagnostic as well as therapeutic measure. I have found stilbesterol even more valuable than the natural estrones because, where menopausal symptoms are accompanied by mental upset, unless the patient is hospitalized it is very difficult to carry out an efficient course of injection treatments.

For the purpose of studying the effect of stilbesterol, I selected twenty office cases whose principal complaints were headaches, dizziness, hot and cold flashes, feelings of depression and, in five instances, actual paranoid delusions. All of these women were started on the same initial dosage, 1 mg daily, given the first thing in the morning. The dosage and time of administration later had to be altered in individual cases to combat nausea.

Nausea seemed to be the chief toxic manifestation and it appeared in only two of the cases. This nausea was not accompanied by vomiting and was easily controlled by reducing the dosage and changing the time of administration to just before going to bed. None of these twenty women were unable to tolerate the drug to the extent where it had to be discontinued. All of the patients were seen once a week and a careful physical check was undertaken at each visit. Toxic manifestations were few and none of a serious nature. One patient developed a skin eruption of a mild nature, a small red rash on the forehead. By reducing the dosage one half we were able to resume treatment without recurrence of the rash. Another case developed edema of the lower lid of the left eye soon after beginning to take stilbesterol. At first I was certain that this was purely coincidental but strangely enough the same symptom recurred whenever the patient received large dosages of the medication. In the cases studied

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*Read before a meeting of King County Medical Society, Seattle, Wash., Sept. 15, 1941.

*Drug supplied by Abbott Laboratories.

Age	Mental Outlook	Hot and Cold Flashes	Headache	Dizziness	Hyperirritability	Mental Depression	Delusion	Dosage	Time taken	Toxic Manifestations	Results
49	Delusional		++			++++	++++	1 mg daily	4 wks.	0	No results from Stilbesterol Later recovery psychotherapy
51	Delusional	+++			++++		++++	1 mg daily	7 wks.	Nausea	No results from Rx
58	Delusional				++++	++++	++++	1 mg daily	10 wks.	0	Slight Improvement
42	Delusional					++	++	1 mg daily	12 wks.	0	Moderate recovery Partly due to psychotherapy
45	Delusional	+	+			++++	+++	1 mg daily	18 wks.	0	No results
41	Anxiety	++	++++	++				1 mg every other day	2 days 3 wks.	Nausea	No results
50	Somatic Complaints	+	++++	+++	++	++		1 mg daily	15 wks.	0	Slight Improvement
54	General Nervousness	+	+		+++			1 mg daily	12 wks.	0	Slight Improvement
37	Normal	++++	+					1 mg every other day	1 wk. 14 wks.	Edema of Eye	Definite Improvement
61	Normal	+++	+					1 mg daily	9 wks.	0	Excellent Complete relief
48	Normal	++++						1 mg daily	10 wks.	0	Improvement
63	Early Senile	++	+	+	+			1 mg daily	10 wks.	Nausea Cleared	Mild Improvement
51	Normal	++				+		1 mg daily	8 wks.	0	Definite Improvement
39	Normal	++	+	+				1 mg daily	10 wks.	0	Moderate Improvement
40	Anxiety	+		++	++			1 mg daily	4 wks.	0	Slight Improvement
37	General Nervousness		++++	++				1 mg daily	6 wks.	0	Some Improvement
44	Normal		+	+				1 mg every other day	1 wk. 11 wks.	Rash	Improvement
35	Normal	+	+		+			1 mg daily	8 wks.	Nausea	Improvement in Regularity of Periods
50	Anxiety		+++	+		+++		1 mg daily	6 wks.	0	No Improvement
58	Anxiety		++	+	+++	+	+	1 mg daily	4 wks.	0	No improvement

Table 1. Twenty patients treated with stilbesterol.

the above mentioned were the only toxic manifestations.

The most important action of stilbesterol seemed to be an almost sharply defined cessation of the hot and cold flashes. The patients also seemed to gain a general sense of well being under the therapy. One woman who had been taking injection therapy spasmodically and with no marked improvement stated, one week after she started to take 1 mg of stilbesterol daily, "I feel like a young girl again with new pep and vitality." A slight exaggeration from a patient aged fifty but a definite indication of improvement.

Table 1 gives an estimate of the results that I have obtained with stilbesterol. I have tried to group cases according to outstanding symptoms, rating severity on a scale of four. The chart also points out the effects that stilbesterol has on different symptoms.

CONCLUSIONS

My deductions from the use of stilbesterol are as follows:

1. In cases of psychoneurosis and frank psychosis, in spite of the fact that the women were in the menopausal period of life and had a few definite menopausal symptoms, very little change was noticed due to stilbesterol. Although there was some mild improvement in their general feeling of health, the patients remained depressed and delusional.

2. Frank, uncomplicated menopausal symptoms cleared in a high percentage of cases.

However, there arises one question in my mind. Initial improvement seemed to be a little out of proportion to sustained improvement. I cannot help but wonder if in the use of this medication there will not arise some doubt as to how long it remains efficacious. Due to the fact that it is synthetically prepared it may become less potent as the patient builds up a tolerance for it.

3. Most patients taking the medication seemed to gain a general sense of improvement and well being.

4. In this medication we have an effective selective means of ruling out the menopause as the cause of a particular woman's mental illness.

5. All toxic manifestations were of a mild nature and easily overcome.

6. Of the twenty office cases treated, seven showed almost complete recovery, seven showed slight improvement, and six showed no improvement. The six that showed no improvement were frankly psychotic.

CLINICAL FORUM

PEDIATRIC PROBLEM

J. B., age 3½ years. First seen in the office and sent to hospital the same day.

Complaints: bloody urine, fever, irritability.

Past history. There is no history of previous illness. Birth and infancy were normal.

Family history. One brother, six years, one sister, one year. Father and mother both well (recently moved from Florida to Seattle).

Present illness. Mother first noticed bloody urine two days before. There has been no dysuria nor frequency but blood has persisted and for the last day there has been "some fever" and irritability.

Physical examination. Well nourished and well developed girl of three and one half years. Does not appear acutely ill. There are many mosquito bites, mostly on the extremities and some of them secondarily infected. E. E. N. and T. are all within normal limits. There is no cervical adenopathy. Heart tones are normal. Lung fields clear. Abdomen: no tenderness, rigidity or palpable masses. Genitalia normal. Extremities and reflexes normal. There is no kidney tenderness.

Hospitalization. On admission her temperature was 99° and varied from 98.6° to 100° for her six day stay. Pulse was 100 and respirations 22. Fluids and soft diet were ordered but no medication.

Laboratory Data: r.b.c., 4,000,000; hbg., 80 per cent, 11.2 gm; w.b.c., 14,400; neutro, 78; lymph, 22.

Daily urine specimen:

2nd day,	a.m.—Smoky	1020	Packed		4.5	1—	0
	p.m.—Smoky	1018	Many	Sev.	5.	1—	0
3rd day,	a.m.—Smoky	1013	Mod.	Few	5.	tr.	0
	p.m.—Smoky	1015	Sev.	Occ.	7.	1—	0
4th day,	a.m.—Smoky	1017	Loaded	—	5.5	1—	0
	p.m.—Smoky	1013	Many	Many	7.	1—	0
5th day	—Smoky	1019	Few	Few	6.	1—	0

Cystoscopic: Urethra and bladder appeared to be normal. There was no obstruction in either ureter to No. 4 catheter. Both sides drained normally with bloody urine seen spurting from the left and clear urine from the right side before ureters were touched. The left ureteral orifice protruded into the bladder abnormally.

Pyelogram. Flat film of abdomen shows no visible stones over any portion of the urinary tract. An opaque catheter is seen in right ureter. Catheter in left ureter is not visualized.

Bilateral retrograde pyelogram shows no detectable abnormality in calyces, renal pelvis or ureter on both sides.

Renal study. Gram stain, r. and l., no organisms. Acid fast stain, r. and l., no fast baccilli found.

Progress. Mother reports that child has been well since leaving hospital. Bloody urine persisted for several days but has not recurred and child seem normal again.

What is your suggestion for diagnosis?

COMMENT ON OBSTETRIC PROBLEM PRESENTED IN AUGUST ISSUE

First commentator believes:

The problem at hand remains complicated, due to the fact that there is no engagement even after reported severe labor. Pelvic measurements given are adequate for an 8 lb. child, but it would be a real help to know the biischial or transverse and posterior saggital measurements as well as curve of the sacrum and the flexibility of coccyx. The low arch of the symphysis and rigid perineum are likely aided by a shallow sacrum of poor concavity in preventing rotation out of the O. L. P. and engagement.

If vaginal examinations have not been made the patient would likely be best delivered by cesarean section without delay. If the vaginal tract has been invaded and possibly infected, there still remains the low cervical or even the Latzgo type of cesarean operation.

A second commenator advises thus:

I think many physicians who deliver babies, and who are surgically minded and looking for some reason to do a cesarean operation would think such a procedure indicated in this case. The membranes having been ruptured for more than thirty-six hours, there would be some danger of infection if a cesarean were done, especially if there had been several vaginal examinations. A low cervical operation would be less dangerous. There is no indication of disproportion in this case as the pelvic measurements seem adequate and the baby was estimated to weigh eight pounds.

(*Continued on Page* 343)

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-SEVENTH ANNUAL MEETING, PORTLAND, SEPT. 2-5

WE POINT WITH PRIDE

Outstanding accomplishments of Oregon State Medical Society for the current year include successful participation in the national defense program, coordination of legislation affecting health, and consolidation and extension of service bureau plans for employed groups. In addition, a great deal of time was consumed in sticking to its established principles governing medical service for various groups.

In the national defense program practically all physicians have been classified according to their abilities and desires for types of service. Thousands of draftees have been examined at a great sacrifice of physicians' time and for no remuneration. There have been no recorded strikes for higher wages and shorter hours. Medical disaster, relief and home defense programs have been organized. Base hospital units have been organized.

In the legislative field direction was offered and accepted which coordinated the great influx of legislation concerning health. Education of legislators in matters medical is a long time job, the fruits of which will be increasingly good.

Service bureau plans have been increased and consolidation and coordination of the physician members is increasingly evident. There is far more unanimity and understanding among physicians of the eleven approved bureaus which service the contracts of over 40,000 employed persons in Oregon.

Point with pride to this year of work and talk about it whenever and wherever you can.

OREGON IS SECOND

The exhibit of Oregon State Medical Society at the State Fair this year featured the decrease in maternal and infant mortality in the state. It is worthy of praise to note that Oregon stands second among all the states in both maternal and infant deaths. This is big progress and only a fraction of a per cent keeps us from being first in both. In addition to the wall chart explaining this, members of the Woman's Auxiliary were at the booth continuously to answer questions and to explain and distribute the prepared pamphlets, a sample of which follows:

TO THE EXPECTANT MOTHER

The physicians of Oregon State Medical Society are interested in you and your baby. They recommend that you consult your physician as soon as pregnancy is suspected.

Your physician will—

1. Examine you thoroughly.
2. Measure you carefully to be sure the pelvis is large enough for normal birth.
3. Take a sample of your blood for proper tests, including Wassermann test for syphilis.
4. Instruct you regarding diet, exercise, sleep and dress.
5. Instruct you regarding general personal care such as bathing, family relationships and care of teeth, breasts and bowels.
6. Tell you when you should visit him at definite times for examination.

Remember—

You should report immediately any symptom which seems unusual to you.

BOARD OF MEDICAL EXAMINERS

The Oregon State Board of Medical Examiners held its regular semiannual examinations at University of Oregon Medical School Library, July 24-26, and announces that licenses to practice medicine and surgery within the State of Oregon have been issued to the following successful candidates: Woodson Bennett, Harold Evans Davis, Robert Louis Day, Russell William Enos, Jack W. Grondahl, Lyle Clarence Ham, Forrest Eugene Rieke, Paul E. Ruuska, Ambrose Byron Shields, Edwin E. Sprecher, David Krause Taylor, Mary Elizabeth Thompson and Robert Harold Tinker, all of Portland; Ivan C. Bohlman of Walla Walla, Wash.; Wesley H. Haffner of Boise, Idaho; Margaret Christine Nilsson of Milwaukee, Noel Burdett Rawls of Corvallis, and Isaac Spomer of Grants Pass, Oregon.

An examination in the practice of osteopathy was included, as a result of which a license to practice osteopathy was issued to George Martin Larson, Jr., of Scio.

On July 25 the Board met for transaction of its regular business and to conduct revocation hearings. Licenses to practice medicine and surgery, based on reciprocity with the several states, were issued to Donald Joseph Bourg, formerly of Detroit, and now located with the Wasco County Health Unit at The Dalles; Esther Lydia Boyer of Madison, Wisconsin; William Young Burton, formerly of Missouri and now engaged as assistant professor of radiology at University of Oregon Medical School Hospitals and Clinics; Rudolph Maximillian Crommelin, Jr., formerly of Boston, and now located with Blair Holcomb of Portland; Fred Ross Otten, formerly of St. Paul, Minnesota, and now located with C. L. Gilstrap of La Grande; Theodore Stuckart of Platte, South Dakota; Allan Joseph Turk of Portland, now located at Gresham; Charles Ellis Warnell of Portland, who has taken over the practice of E. G. Robinson, now in the United States Navy, and Lisle Milton Wyatt, formerly of Kansas City, Missouri, who will be located with the Student Health Service at the University of Oregon.

It is also announced that the Oregon Basic Science Examining Committee, cooperating with the Board, will give a special basic science examination on September 20 to accommodate applicants who can make a showing that immediate issuance of their Oregon licenses is necessary by reason of the emergency caused by the national defense program. Through this courtesy, successful candidates may have their applications for reciprocity considered at the October meeting of the medical Board, thus permitting immediate replacement of physcians called into service.

At a recent interview over radio station KALE, conducted by Elizabeth Roe Hollingsworth on her program, "The Voice of American Women," the duties and powers of the Board were discussed by Miss Lorienne M. Conlee, legal adviser and executive secretary to the Board. The program has caused much favorable comment from listeners heretofore unfamiliar with the precautions taken by the State Legislature, through creation of the Board of Medical Examiners, and with cooperation of the medical associations, to maintain a high standard in the profession, thereby protecting both the profession and the public from improper and unprofessional practices. It was also worthy of comment that the members of the profession themselves provide the cost of policing their profession.

The present members of the Board are Frank E. Fowler, M.D., F.A.C.S., of Astoria, president; L. S. Besson, M.D., of Portland, secretary-treasurer; Carl G. Patterson, M.D. of Baker, Charles C. Newcastle, M.D., F.A.C.S. of Portland, Irvin R. Fox, M.D. of Eugene, H. L. Blosser, M.D. of Portland and J. L. Ingle, D.O. of La Grande.

STATE BOARD OF HEALTH

Southern Oregon Health Officers Meet. On August 13 the health officers, public health nurses, sanitarians and secretaries of Klamath, Jackson, Josephine, Douglas and Coos County Health Departments met at Oregon Caves.

New Health Officer Appointed. John F. Belz was recently appointed rural district director in the department of maternal and child health. Dr. Belz was graduated from medical school in 1938, following which he interned and completed a two-year residency in pediatrics at Stanford.

Warren H. Gardner, Ph.D., consultant in hearing and vision of the State Board of Health, is now back in the state after an extended lecture trip in the midwest. On this tour Dr. Gardner delivered lectures at the Conference on Education of the Hard of Hearing at Indiana University; the Central Zone Conference of Hard of Hearing at Minneapolis, and to classes at Iowa University and Northwestern University at Evanston.

Hospital Inspection Nearly Completed. Willard Stone is soon to return to his duties with the Oregon State College Health Service. Dr. Stone spent the summer inspecting maternity hospitals and discussing with physicians in the state problems related to maternal welfare.

Health Officer to Navy. A. N. Johnson, Douglas county health officer, left for active duty with the Naval Reserve August 4. Dr. Johnson recently completed a year of public health training at University of Minnesota. W. A. Cartwright has been appointed acting health officer during the absence of Dr. Johnson.

Salem to Treat Sewage. Consulting engineers have been employed by the city of Salem to design a sewage treatment plant to treat sewage not only from the city but from state institutions as well. The state legislature appropriated $75,000, part to be used to construct sewers from state institutions to the city of Salem sewerage system, and the remainder to be turned over to the city as the state's share of the cost in constructing the treatment plant.

MEDICAL NOTES

Leep Memorial Hospital, Bandon, has announced that plans have materialized to add a new maternity wing to the hospital.

Crater Lake National Park. The Annie Spring C. C. C. camp is constructing a hospital building at Crater Lake. The upper story will be used as a residence for the park doctor and his family.

Adolph Weinzirl, Portland City Health Officer, will resign his present position to become director of the Social Hygiene Fund established by the late Dr. E. C. Brown, and will also head a newly created public health department at the University of Oregon Medical School.

E. R. Powell, Eugene, has resigned as medical director of Lane County Welfare Commission, and plans to enter private practice in southern California.

A. L. Black, formerly of Heppner, has joined the staff of the Walker Clinic, Springfield.

Jack Grondahl, a recent graduate of University of Oregon Medical School, has become associated with G. L. McBee, Pendleton.

William J. Moore, formerly of Myrtle Point, has established offices in Grants Pass.

OBITUARIES

Dr. Gaven C. Dyott of Eugene, died July 15 at the age of 49 years. The cause of death was coronary occlusion.

Dr. J. W. Huff of Baker died July 6 at the age of 84. The cause of death was peritonitis and pneumonia.

Dr. Charles H. Robertson of Salem died July 16 at the age of 71. His death was due to cerebral embolism and heart block.

CLINICAL FORUM

(*Continued from Page* 341)

The head has not engaged and may not do so, but, inasmuch as the cervix is only dilated 2 cm. though effaced, further labor might dilate the cervix and good effective pains might engage the head. The baby's condition is good so that the problem is to see what the mother can accomplish and to watch carefully the condition of mother and baby.

A third commentator offers these observations:

The prime factor in this problem is the cephalopelvic relationship. To clarify this a roentgenogram should be made to ascertain if disproportion exists. If absolute disproportion exists, a section is absolutely required without delay. A low cervical section is the procedure of choice. In view of ruptured membranes and the potential or actual intrauterine infection, a skillful operator might attempt an extraperitoneal section.

If relative disproportion exists, the obstetrician is justified in giving the patient further closely observed labor for another twenty-four hours or even longer if there are no signs of fetal or maternal distress. The mother should be given adequate fluids and bladder distention prevented by the catheter. During this period of labor the obstetrician may instill 30 cc. of acriflavine in glycerin each four hours after the method of Brown. Sedation should be given as needed with the labor pains as a guide.

If no disproportion between the fetal head and maternal pelvis exists, the same period of observational labor as above outlined is in order with greater hopes of delivery by vagina. If the head descends as a posterior presentation with the

(*Continued on Page* 347)

DEVELOPMENT OF WASHINGTON STATE MEDICAL ASSOCIATION

The following data concerning the early societies of the medical profession of Washington were obtained from records which were in the possession of Dr. Gideon A. Weed, who was secretary during the formative period herein described. It is of interest to doctors of the state to note some of the developments during the early years which preceded formation of the existing Washington State Medical Association.

On January 4, 1873, six physicians of Olympia and vicinity met for the purpose of discussing a medical society for the Territory of Washington. It was decided to call a later meeting to arrange for a permanent organization and Dr. A. H. Steele of Olympia was elected to serve as president until that time.

MEDICAL SOCIETY OF WASHINGTON TERRITORY

The organization meeting was held in Olympia February 19, 1873, with the following men present: A. H. Steele, Nathaniel Ostrander, Rufus Willard, S. Hemmingway and J. W. Waughop. A constitution and set of by-laws were adopted and the society was named the Medical Society of Washington Territory. A. H. Steele was elected president.

This society held meetings in October, 1873, and October, 1874. A meeting scheduled for April, 1874, was adjourned because of lack of a quorum. There were no further meetings until 1879, when seven physicians met in Steilacoom to reorganize the society. After deliberation it was decided to adopt the constitution and by-laws of the Medical Society of Washington Territory, retain the name, and consider the meeting as the first annual meeting of the society.

Annual meetings were held each year through 1883. The Sixth Annual Meeting was in Seattle June 18, 1884, with five members present. Edward L. Smith of Seattle was elected president and the meeting was adjourned to meet again at his call.

The records show that there had been ten members admitted to the society in 1873, one in 1874, five in 1879, four in 1881, nine in 1882, five in 1883 and two in 1884.

MEDICAL SOCIETY OF THE STATE OF WASHINGTON

In 1889, Dr. Smith, as President of the Society of Washington Territory, issued the following call:

> To the Medical Profession of Washington Territory. It is thought best by a number of the Territorial Society to call a meeting of its members for the purpose of reorganizing a new Society for the State of Washington.
>
> A meeting will consequently be held at the Tacoma Hotel in Tacoma on Monday, October 24, 1889, for that purpose.
>
> The attendance of all members of the old Society, all members of the regular profession in the Territory, and especially delegates of the several local societies is urgently requested. Physicians intending to become members will please bring credentials. Edward L. Smith, *President.*

It was moved at the meeting on October 24 that the territorial society adjourn sine die, and reconvene as Medical Society of the State of Washington. A new constitution and set of by-laws were adopted, and all members of the territorial society, together with all physicians present at the meeting, were considered as charter members. Edward L. Smith of Seattle was elected first president.

The first annual session of the new society was held in Spokane May 7, 1890. A large group of physicians was admitted to membership at this meeting, and in a resolution adopted then mention is made that the society represented "seven-eighths of the resident practicing physicians of this state." C. K. Merriam of Spokane was elected as second president at the meeting.

WASHINGTON STATE MEDICAL ASSOCIATION

Sessions of Medical Society of the State of Washington were held annually. In a revised constitution, adopted May 3, 1893, the name was changed to Washington State Medical Society.

Because of confusion of the term state society with that of the county societies, the name was changed again on June 25, 1902, to Washington State Medical Association. It was incorporated under this name December 16, 1909.

Following an elaborate survey of malpractice defense procedures, the Medical Defense Fund of the Association was created July 14, 1913.

Important Dates in Formation of Washington State Medical Association

January 4, 1873. Meeting of six physicians in Olympia to discuss a medical society for the Territory of Washington.

February 19, 1873. Organization and first meeting of Medical Society of Washington Territory in Olympia.

October 8, 1879. Reorganization of Medical Society of Washington Territory and first annual session in Steilacoom.

October 24, 1889. Organization of Medical Society of the State of Washington in Tacoma.

May 7, 1890. First annual session of Medical Society of the State of Washington in Spokane.

May 3, 1893. Change of name to Washington State Medical Society.

June 25, 1902. Change of name to Washington State Medical Association.

December 16, 1909. Incorporation of Washington State Medical Association.

July 14, 1913. Organization of Medical Defense Fund.

Charter Members, Washington State Medical Association

Admitted at Organization Meeting, Tacoma, Oct. 24, 1889

Member and Address

Armstrong, Johnston, Tacoma
Beach, Abijiah, Renton
Beach, Wm. M., Shelton
Black, Robert C., Castle Rock
Bories, Emil, Dayton
Boswell, Cal. M., Colfax
Calhoun, G. V., Seattle
Coe, Franz H., Seattle
Crump, John M., Tacoma
Davis, Richard M., Colfax
Dawson, Lewis R., Seattle
Dewey, Henry W., Tacoma
Eagleson, Jas. B., Seattle
Essig, N. Fred, Spokane
Flannigan, C. L., Olympia
Goddard, Fred L., Tacoma

Member and Address

Goodspeed, T. V., Seattle
Heg, Elmer E., Seattle
Hills, Edward L., Tacoma
House, Clayton P., Spokane
Kibbe, Alfred B., Seattle
Libby, George W., Spokane
Loughary, James B., Seattle
Marion, Alfred V., Walla Walla
McKone, James J., Tacoma
Merriam, C. K., Spokane
Merrick, C. H., Seattle
Ostrander, Nathl. C., Olympia
Pietrzycki, Marcel, Dayton
Reich, G. A., Seattle
Russell, Donald G., Spokane
Shannon, Wm. A., Seattle

Shaver, George D., Tacoma
Smith, Edward L., Seattle
South, John, Hoquiam
Sundberg, J. C., Olympia
Tuttle, H. P., Tacoma
VanBuren, Martin F., Tacoma
Vanzant, Euclid, Whatcom
Wagner, George E., Tacoma
Waughop, J. W., Steilacoom
Weed, Gideon A., Seattle
Willard, Rufus, Seattle
Williams, Herbert J., Tacoma
Willison, Henry C., Port Townsend
Wintermute, Geo. S., Tacoma

Members Admitted During First Annual Meeting
Spokane Falls, May 7, 1890.

Member and Address

Armstrong, George S., Spokane
Bell, Frank M., Kelso
Brown, Chas. G., Spokane
Byrne, Patrick S., Spokane
Capron, Victor J., Port Townsend
Caston, Wm., Spokane

Member and Address

Catterson, Thos. L., Spokane
Coe, W. G., North Yakima
Doolittle, Geo. T., Spokane
Essig, Henry, Spokane
Freeman, Benjamin R., Spokane
Graham, Thomas, Palouse
Harrison, Isaac M., Port Townsend
Harvey, Benjamin F., Colfax
Hood, C. J., Spokane
Kloeber, John S., Seattle
LaBrie, Alexis, Spokane
Lockhart, Wilson, Spokane
Lowery, Robert, Port Townsend
MacLean, John D., Spokane
MacLeod, Alex F., Farmington
Magee, Irwin L., Palouse
Manly, Sherry H., Spokane
Mason, Darius, Spokane
Pomeroy, Francis A., Palouse
Potter, Wallace W., Spokane
Powell, Jas. M., Spokane
Rawlings, Carroll M., Spokane
Redpath, Nathl. J., Olympia
Reno, H. C., Spokane
Smith, Clarence A., Seattle
Smith, David L., Spokane
Weems, E. W., Spokane
Wenzlick, William, Port Townsend
Williams, H. S., Spokane
Willsey, Judson T., Uniontown

HONORARY MEMBERS

Blair, Hannibal, Elma
Buckly, J. J., Butte, Mont.
Gaudy, J. E.
Luce, Frank H., Tacoma
Power, Isaac N., Olympia
Steele, Alden H., Olympia
South, John, Hoquiam

Meeting Places and Presidents of Washington State Medical Association

TERRITORIAL SOCIETY

	Annual Meeting		*President*	
No.	*Date*	*Place*	*Name*	*Residence*
Organization Meeting				
	Jan. 1873	Olympia	A. H. Steele	Olympia
1	Feb. 1873	Olympia	A. H. Steele	Olympia
2	Oct. 1873	Olympia	A. H. Steele	Olympia
3	April 1874	Seattle	S. F. Chapin	Seattle
Reorganized Society				
1	Oct. 1879	Steilacoom	G. A. Weed	Seattle
2	April 1880	Port Townsend	G. A. Weed	Seattle
3	Oct. 1881	Seattle	G. A. Weed	Seattle
4	Oct. 1882	New Tacoma	H. C. Willison	Port Townsend
5	June 1883	Seattle	Rufus Willard	Seattle
6	June 1884	Seattle	E. L. Smith	Seattle
7	Oct. 1889	Tacoma	E. L. Smith	Seattle
STATE ASSOCIATION				
	Oct. 1889	Tacoma	E. L. Smith	Seattle
1	May 1890	Spokane	E. L. Smith	Seattle
2	May 1891	Seattle	C. K. Merriam	Spokane
3	May 1892	North Yakima	H. C. Willison	Port Townsend
4	May 1893	Tacoma	N. F. Essig	Spokane
5	May 1894	Spokane	J. W. Waughop	Steilacoom
6	May 1895	Seattle	D. Mason	Spokane
7	May 1896	Tacoma	G. S. Armstrong	Olympia
8	May 1897	Spokane	R. L. Thomson	Spokane
9	May 1898	Seattle	J. B. Eagleson	Seattle
10	May 1899	Tacoma	H. W. Dewey	Tacoma
11	May 1900	Spokane	C. G. Brown	Spokane
12	June 1901	Seattle	P. W. Willis	Seattle
13	Sept. 1902	Tacoma	J. W. Bean	Ellensburg
14	Sept. 1903	Spokane	C. McCutcheon	Tacoma
15	July 1904	Seattle	F. H. Coe	Seattle
16	Sept. 1905	Tacoma	J. R. Yocom	Tacoma
17	Sept. 1906	Spokane	G. W. Libby	Spokane
18	Sept. 1907	Seattle	J. H. Lyons	Seattle
19	Sept. 1908	Walla Walla	C. M. Suttner	Walla Walla
20	July 1909	Seattle	C. A. Smith	Seattle
21	July 1910	Bellingham	W. D. Kirkpatrick	Bellingham
22	Sept. 1911	Spokane	W. Johnston	Spokane
23	July 1912	Portland	L. L. Love	Tacoma
24	July 1913	Everett	W. C. Cox	Everett
25	Sept. 1914	North Yakima	C. J. Lynch	Yakima
26	July 1915	Tacoma	C. W. Sharples	Seattle
27	July 1916	Seattle	J. R. Brown	Tacoma
28	June 1917	Spokane	J. M. Semple	Spokane
29	July 1918	Seattle	G. M. Horton	Seattle
30	Sept. 1919	Spokane	H. P. Marshall	Spokane
31	Sept. 1920	Tacoma	S. W. Mowers	Tacoma
32	Sept. 1921	Seattle	A. E. Burns	Seattle
33	Sept. 1922	Tacoma	W. D. Read	Tacoma
34	Sept. 1923	Spokane	J. H. O'Shea	Spokane
35	Aug. 1924	Big Four	W. F. West	Everett
36	Sept. 1925	Seattle	D. A. Nicholson	Seattle
37	June 1926	Spokane	S. S. Oppenheimer	Spokane
38	Aug. 1927	Tacoma	H. G. Willard	Tacoma

39	Aug. 1928	Seattle	R. J. O'Shea	Seattle
40	Aug. 1929	Yakima	F. H. Brush	Yakima
41	Sept. 1930	Mt. Baker	H. E. Cleveland	Burlington
42	Aug. 1931	Aberdeen	A. E. Anderson	Aberdeen
43	Sept. 1932	Tacoma	H. J. Whitacre	Tacoma
44	Aug. 1933	Seattle	A. H. Peacock	Seattle
45	Sept. 1934	Spokane	Carroll Smith	Spokane
46	Aug. 1935	Everett	N. L. Thompson	Everett
47	Sept. 1936	Yakima	D. F. Bice	Yakima
48	July 1937	Seattle	A. C. Crookall	Seattle
49	Aug. 1938	Bellingham	J. R. Morrison	Bellingham
50	Aug. 1939	Spokane	H. E. Rhodehamel	Spokane
51	Aug. 1940	Tacoma	W. B. Penney	Tacoma
52	Aug. 1941	Seattle	H. L. Dudley	Seattle

DEPARTMENT OF HEALTH

Refresher Course in Obstetrics. During the summer the State Department of Health, through its Division of Maternal and Child Hygiene, cooperated with the Committee on Maternal and Child Welfare of the Washington State Medical Association and respective local medical societies in sponsoring and financing the annual physicians' refresher courses in obstetrics. The invited guest lecturer was Dr. Kretzschmar. The lectures began in Ellensburg on June 23 and continued for two weeks, covering the following lecture points in addition to Ellensburg: Okanogan, Wenatchee, Yakima, Walla Walla, Colfax, Spokane and Pasco.

It should be pointed out that this program is not in competition with the program of the Committee on Graduate Medical Education and Hospitals of the State Medical Association, but is supplementary to the program of that Committee. The above program, in reality, is a part of the program of the State Committee.

Studies Begun and Under Way. A study on tuberculosis care in the State of Washington is approaching completion. Such study began about two months ago, and was designed to determine something of the problem of tuberculosis care and something of how that problem is met, related costs, etc. When the study is completed, an effort will be made to furnish a very brief abstract of it in these columns.

A continuing analysis of the findings of serologic examinations for syphilis, required under the State Prenatal Law, is being conducted. When sufficient material is analyzed, it is expected that an abstract of it may be furnished in this column for the information of the physicians of this state.

New County Health Units Established. Two new local public health departments have opened on a full time basis during the month of August.

The Kitsap County Health Department, offices at 2813 Farragut Street, Bremerton, is under Harold Granning, loaned to this state from the U. S. Public Health Service, and detailed to Kitsap County by the Director of the State Department of Health.

Dr. Granning has had the responsibility of organizing the Kitsap County Health Department and initiating the program. Russell Wilson, also loaned by the U. S. Public Health Service, and detailed by the Director of the State Department of Health to Kitsap County, will take over the program and further develop the department at such time as Dr. Granning will be called back to active duty in the U. S. Public Health Service to carry on plague work for the service.

Special Field Studies During the Summer. The Hooper Foundation at San Francisco has resumed its studies on encephalitis in Washington, begun in 1940 at the time of an epidemic of that disease in the Yakima Valley and related areas. This is a cooperative study between the State Department of Health, the Hooper Foundation and the State College at Pullman. The field work is rapidly drawing to a close and an analysis of findings will be made in subsequent months.

The U. S. Public Health Service cooperated with the State Department of Health in a survey of rodents and plague in rodents in eastern Washington, and in a rodent extermination program, particularly about points of military mobilization and related areas in eastern Washington. The State Department of Health met the expense of equipment, salaries and operations of the study and the U. S. Public Health Service provided a trained field crew and directed the work.

The State Department of Health had maintained a field crew and truck laboratory since 1936, making a preliminary investigation of the extent and character of foci of plague in rodents of eastern Washington. The work is of a seasonal nature and did not warrant continuing a crew the year around, after said crew had completed a survey of rat harbors in western Washington during off season periods for rodents in eastern Washington.

DEPARTMENT OF LABOR AND INDUSTRIES

Recently Governor Langlie appointed as Director of the Department of Labor and Industries Mr. Robert H. Harlin of Seattle. The director has announced the reappointment of W. E. Steele to the position of chief medical adviser. Dr. Steele has filled this position for a number of years to the satisfaction of those connected with the department and the medical profession of the state. It is a source of gratification, and for the welfare of the department, that an experienced and able official should not be replaced by a change of administration.

The field of activity of the Department of Labor and Industries has increased extraordinarily within recent months, owing to the expansion of defense industries. The number of patients coming under the supervision of the department has of late expanded about forty per cent, making a monthly total of over 7,000 cases. The experience of Dr. Steele during recent years of service is a guarantee of efficient administration of the responsibilities over which he has supervision.

MEDICAL NOTES

Problems of National Defense. Problems of sanitation in areas of concentration of military personnel and defense workers, as well as problems of control of communicable diseases, present an everincreasing demand upon the health department in and adjacent to such areas. A staff of sanitarians were given instruction and field supervision in the military area of Fort Lewis in June, and have been made available to the staff of the health departments of Pierce County and Tacoma and to Kitsap County.

Health Officer Vacancy in Walla Walla Filled. John A. Kahl has been appointed to fill the vacancy in the position of Health Officer in the Walla Walla County-City Health Department. He was the former Health Officer of Clark County and largely responsible for a progressive program being developed in that County. During the rush period of June and July he willingly assumed the responsibilities of Chief of Local Health Work in the State Department of Health, discharging the responsibilities in a creditable and efficient manner.

Official Appointments. Paul West has been appointed health officer for Chelan County for the next year. He has been Acting Health Officer since G. R. Kingston was called to service with the Army. Gail Garrison, formerly of Oklahoma City, has been appointed health officer and city physician for Jefferson County. He will replace L. E. Foster who has resigned to enter a Bremerton Clinic. E. J. Taylor, who interned at Swedish Hospital, Seattle, last year, has joined the staff of the Yakima Health Office. Peter D. Brink has been appointed health officer for Garfield County. R. H. Welding has been named full time physician for Kittitas County.

Sanitarium Under Construction. Lewis and Pacific Counties are uniting in construction of a tuberculosis sanitarium at Chehalis, the plant for which will cost approximately $75,000.

King County Seeks Funds. Board of County Commissioners of King County plans to ask a $500,000 federal grant for construction of an outpatient department at King County Hospital. This grant would be expected to come under the Lanham Act, which has to do with national defense.

Night Clinic at Seattle. The Seattle Health Department has established a night clinic to provide physical examinations for municipal service, Army and Navy recruits and defense workers.

Locations. H. S. Jessup of Sequim has moved to Port Angeles. Conrad Weitz, Jr., has located in Colfax. He interned last year at Sacred Heart Hospital, Spokane. Maurice Bryant has joined his uncle, Frank Bryant at Colfax. He graduated from University of Louisville and interned at Akron, Ohio. Richard Humphreys has moved to Grand Coulee. L. E. Foster, formerly of Port Townsend, and David Mason of New Haven, Connecticut, have joined the staff of the Benson Clinic at Bremerton. J. G. Stubblebine has purchased the practice of H. S. Jessup of Sequim. Roger S. Dille has joined Stanley Holton in practice at Mount Vernon.

Wedding. W. D. Kirkpatrick of Bellingham and Florence Johnson, former dean of women at Western Washington College, were married at Kalispell, Montana, July 28.

OBITUARIES

Dr. David Alfred Angus of Rosalia died August 2, aged 73. He was born in Pardeeville, Wisconsin and received his medical education at Rush Medical College, University of Chicago, graduating in 1896. He practiced for a time in Chicago and moved to Rosalia in 1905. He was active in practice until a short time before his death.

CLINICAL FORUM

(*Continued from Page* 343)

cervix dilated, delivery may be completed with the occiput posterior or by manual or forceps rotation with extraction. Podalic version is not advised. A high percentage of vertex deliveries do engage in the posterior position. Procedures which are contraindicated in the problem as presented are: (1) operative or nonoperative effort without roentgen studies, (2) cesarean section as an "escape," (3) manual dilation, Duhrssen's incisions of the cervix, version, Vorhees bag, etc., (4) oxytoxics.

A fourth commentator advises:

Before resorting to a cesarean I would give the mother a much needed rest with a full dose of morphine or pantapon and then let her labor a short time further, watching her condition and that of the baby. If the head did not engage after a fair trial and after a rest of the mother and if the cervix would not dilate, I would do a low cervical cesarean section, if the baby was alive and in good condition.

A fifth commentator says:

In view of the prematurity of labor and the fact that the membranes had ruptured spontaneously thirty-six hours previously, I would suggest conservative treatment. It would be advisable to give the patient morphine gr. 1/4, let her rest for several hours and give the soft parts an opportunity to relax. As labor progresses a nonengaged vertex, occiput posterior, may rotate spontaneously. A tight abdominal binder such as the Van Hoosen labor belt would aid greatly in engaging the presenting part. If spontaneous rotation does not occur, the pelvic measurements appear ample to allow delivery of a persistent posterior.

CONCLUSION OF CASE

To summarize, the membranes had been ruptured for two or three days which predisposes to infection. She was a primipara with normal pelvic measurements, but with rigid soft parts and undilated cervix, together with posterior position and head not engaged.

One of three methods of management could be followed: (1) let her alone, (2) intrauterine bag, (3) cesarean section.

She had already had a test of labor without progress and, showing some signs of exhaustion, the first plan was ruled out.

Because of the rigidity, position, apparently undilatable cervix and uncertainty of the procedure, the bag was decided against, even though it was very desirable to deliver her from below to reduce dangers of puerperal infection.

Finally, cesarean of the low cervical type was performed. This seemed the best procedure even with rupture of the membranes so long previously. The patient's recovery was normal and she was discharged from the hospital on her twelfth day in good condition nursing her baby. This is the end of a long tale.

IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, JUNE 23-27, 1942

MEDICAL NOTES

Official Appointments. Glen A. Hoss of Caldwell has been named county physician for Canyon County. J. C. Kern has been appointed director of North Central Idaho Health Unit. He replaces A. C. Sibilsky who goes to Michigan to enter private practice. Dr. Kern practiced in Texas before coming to Idaho.

Public Health Group Meets. Fall meeting of the Idaho Public Health Association will be held at Lewiston October 7.

Dr. Frank Lahey will speak in Boise at a dinner meeting at the Owyhee Hotel on the evening of September 3. On September 4 he will conduct a clinic at St. Luke's Hospital on thyroid diseases.

Locations. William T. Wood has arrived in Coeur d'Alene, where he will be associated with his father, John T. Wood. Dr. Wood graduated from Western Reserve University, interned at Lakeside Hospital, and spent two years training in pediatrics in Babies and Children Hospital, Cleveland.

R. H. Engelcke has recently become associated with James L. Stewart in Boise. Before coming to Boise Dr. Engelcke had spent three years in the Department of Surgery at the University of Pennsylvania. Everett N. Jones of Boise has recently returned from Mayo Clinic where he spent some time in the Department of Surgery. Norman G. Hedemark has recently located in Boise in association with A. C. Jones. Max D. Gudmundsen is a new associate of Fred Pittinger of Boise.

E. D. Parkinson, formerly of Payette, has recently opened offices in the Eastman Building in Boise for the practice of proctology and treatment of peripheral vascuular diseases.

Ralph Rigby has left Council where he has been associated with Alvinm Thurston. Thomas M. Leonard, graduate of Rush Medical College, has joined E. J. Fitzgerald for practice at Wallace. A. M. Peterson, who interned last year at Sacred Heart Hospital, Spokane, has located in Wallace.

A New Public Health Unit established in Boise is known as the City-County Health Unit. Its headquarters are at 415 Capitol Securities Building and G. Denton Bock is director. Mr. R. D. Bovey is the milk sanitarian associated with the unit and Mr. Walter Murphy is sanitarian. At present there are two nurses in the unit, Miss Marie Richardson and Miss Fay Kopke.

Ruth Raattama has joined the staff of the State Department of Public Health as director of Maternal and Child Health and Crippled Children. Dr. Raattama comes from Illinois.

Vectors of Infection. Some interesting work is being done by the State Department of Public Health on vectors of infection of malaria, relapsing fever, plague and encephalitis. There is reason to believe that the Aedes type of mosquito may be the means of spreading encephalitis in the horse to human beings. At a later date Dr. Berry will probably talk to the different district societies on this subject.

OBITUARY

Dr. Malcolm MacKinnon of Aberdeen died August 10 of cerebral hemmorhage. He was 60 years of age. He was born October 31, 1881, on Prince Edward Island, Canada, and received his medical education at Queens University, faculty of medicine, Kingston, Ontario, graduating in 1909. Shortly following graduaaion he located at Sand Point but soon moved to Aberdeen.

BOOK REVIEWS

Orbital Tumors. Results Following the Transcranial Operative Attack. By Walter E. Dandy, M.D., Clinical Professor of Neurological Surgery, Johns Hopkins University, School of Medicine. 168 pp. $5. Oskar Piest, New York, 1941.

In 1921 the author encountered, by the cranial route, an intracranial tumor that had extended through the optic foramen into the orbital cavity. He removed the roof of the orbit in order to follow and extirpate that portion of the new growth. The procedure was so simple, easy and effective that a new method was born which was much superior to other operations such as the Krönlein, even for tumors confined to the orbit alone. It is more advantageous because of the much more complete and safer exposure of the orbital contents. This book describes results since obtained by this method. The case reports, excellent illustrations, pathologic findings, operative technic and conclusions make this a ready and valuable reference book that should be in every ophthalmologist's as well as every neurosurgeon's library.

L. L. McCoy

Infantile Paralysis. A. Symposium Delivered at Vanderbilt University, April, 1941. 239 pp. National Foundation for Infantile Paralysis, Inc., 1941.

This series of six lectures brings information and data up to date on this still puzzling disease. History, etiology, immunological and serological phenomena, pathology and pathogenesis, epidemiology, treatment and rehabilitation are covered in separate chapters. Each is in the form of a lecture given by a qualified authority. Reading this book leaves one with the impression that, although great advances have been made, our knowledge is still inadequate to answer the many questions that arise when one is confronted with a case of poliomyelitis. Though of primary interest to the pediatrist and the orthopedist, this disease touches at some time the professional or personal life of every physician. This symposium provides the most readable review of the subject that has come off the press in recent years. The bibliography lists 575 articles. This alone makes the book a valuable reference.

W. B. Seelye

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Manual of the Diseases of the Eye for Students and General Practitioners. By Charles H. May, M.D., Consulting Ophthalmologist to Bellevue, Mt. Sinai and French Hospitals, New York, etc. Seventeenth Edition, Revised with the Assistance of Charles A. Perera, M.D., Associate in Ophthalmology, College of Physicians and Surgeons, Medical Department of Columbia University, etc. With 387 illustrations, including 32 plates, with 93 colored figures. $4. William Wood and Company, Baltimore, 1941.

Since 1900 seventeen editions of this volume have been published, being translated into ten other languages, which is a testimonial of its accepted value. It is not a book alone for the ophthalmologist, but is intended for information for general practitioners, every one of whom should have at least a calling acquaintance with diseases of the eye which will enable him to institute timely treatment by the specialists having more knowledge than he possesses. Covering the whole field of diseases of the eye, naturally these cannot be described in detail. Sufficient information is offered, however, to give one a general view of the diseases under consideration, some of which may be adequately treated by the general practitioner. Every physician should have on hand a standard work like this on diseases of the eye which will be of material assistance in his daily work.

A Manual of Allergy for General Practitioners. By Milton B. Cohen, M.D., Director of The Asthma, Hay Fever and Allergy Foundation, St. Alexis Hospital, Cleveland. 156 pp. $2. Paul B. Hoeber, Inc. Medical Book Department of Harper & Brothers, New York, 1941.

This book is a brief on allergy and omits all the detail we find in many of the recently written books on this subject. For this reason, it cannot be recommended as a book for therapy. It is intended as an introduction to the man who does not have a working knowledge of allergy. In this capacity it is excellent. The basic principles are taken up methodically and express the vast clinical knowledge and sound judgment of its author concisely and clearly. It should prove popular with the general practitioner and give him a real appreciation of this subject. As it is a small volume, an evening can be well spent reading it.

J. E. Stroh.

Principles and Practice of Ophthalmic Surgery. By Edmund B. Spaeth, M.D., Professor of Ophthalmology in the Graduate School of Medicine of the University of Pennsylvania, etc. With 451 Engravings, Containing 1149 Figures and 6 Colored Plates. 886 pp. $10. Lea & Febiger, Philadelphia, 1941.

This volume is more than a second edition. It is really a new book on surgery and one that every ophthalmologist should have. This book contains information that many men hoped to find in the first edition. The general text is very similar to the first edition but the various surgical proceedings are gone into with greater detail and more operations are described with greater detail for the care of the same condition. The general ophthalmic surgical conditions are well described as well as the plastic operations of which the author is an authority. There is a very excellent review of retinal detachment operations.

C. D. F. Jensen.

Roentgen Therapy of Chronic Arthritis. By Karl Goldhamer, M.D., Associate Roentgenologist, St. Mark's Hospital and Quincy, Ill., Roentgen and Radium Laboratories. With 24 Original Illustrations, two Roentgenograms and four Tables. 131 pp. $2. Radiologic Review Publishing Co., Quincy, Ill., 1941.

This book is of interest for two reasons: (1) the use of drawings rather than roentgen films to show the changes which are present in roentgenograms. One has the impression that the result would be a very happy one if the roentgenograms were reproduced along with the drawings; (2) the author's report of 100 cases treated with roentgen therapy. The value of this is largely vitiated by the lack of accompanying clinical material and the fact that there is no correlation of the results per individual case. For example, of ten cases of atrophic arthritis treated, two were symptom-free but we do not know the length of the follow-up nor the duration of the disease prior to treatment. Because of this, one feels that the stated purpose of the book, "the purpose of this publication is to make the general practitioner better acquainted with this type of therapy and to remind him that roentgen therapy is a valuable addition to our armamentarium in the treatment of this common disorder," is not fulfilled and, as a piece of salesmanship, it is unconvincing.

K. K. Sherwood.

New and Nonofficial Remedies; 1941, Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1941. 691 pp. $1.50. American Medical Association, Chicago, 1941.

Descriptions of articles included in this volume are based in part on investigations made under direction of the Council, and in part on evidence and information supplied by the manufacturer. Information which it contains is authoritative, and anyone desiring to know the facts concerning approved current medical preparations should have access to this volume. Each year it is revised, cetrain listed articles being omitted because they conflict with rules of the Council, or because their distributors did not present convincing evidence to demonstrate their continued eligibility. So many new medicinal preparations have been prepared during recent years that information concerning their composition and uses is timely.

Essentials of Pharmacology and Materia Medica for Nurses. By Albert J. Gilbert, M.D., Instructor of Pharmacology, Aultman School of Nursing, Canton, Ohio, etc.; and Selma Moody, R.N., Instructor in Nursing Arts, The Presbyterian Hospital of the City of Chicago. 251 pp. $2.25. The C. V. Mosby Company, St. Louis, 1941.

"The object of this little volume is to present the facts and theories of pharmacology and materia medica for nurses in a lucid, concise form adapted to the limited time available for the course in many nursing schools." Every practicing nurse should have some knowledge of these subjects. After a discussion of sources of drugs and matters pertaining to them, chapters consider many features of drugs. They cover local action of those affecting the nervous system, circulation, blood, respiration, digestive system, urinary tract, uterus. The basic principles of these various actions are concisely and lucidly presented in terms that the reader may comprehend.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1940, With the Comments that have Appeared in The Journal. 181 pp. $1. American Medical Association, Chicago, 1941.

This volume contains reports adopted by the Council and authorized for publication during 1940. It also includes other reports of lesser importance which were not published but are here included as a matter of record. This volume lists many of the newest preparations, the usefulness of which is being demonstrated in daily practice.

NORTHWEST MEDICINE

JOURNAL OF OREGON STATE MEDICAL SOCIETY, WASHINGTON STATE MEDICAL ASSOCIATION
AND IDAHO STATE MEDICAL ASSOCIATION
ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION
Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879. Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 8, 1917, authorized July 31, 1918.

Vol. 40, No. 10 OCTOBER, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

SIX MONTHS OF STATE MEDICINE

During recent years bills have been introduced in nearly all of our state legislatures, aimed to establish some form of socialized medicine. These bills have been defeated or pigeonholed. Last fall, however, Washington inaugurated a limited form of state medicine, not through legislative action but from the passage of an initiative bill by a majority of 100,000 votes, favoring an old-age pension measure which became effective April 1.

This bill provides a pension of forty dollars per month for all citizens who have attained the age of sixty-five, subject to certain qualifications as to additional income, possession of property and other features. A portion of the pension is supplied by the federal government. One section of the bill provides for free medical and dental services for the beneficiaries. The pensioners are permitted free choice of doctor and dentist from legally qualified practitioners. The attorney general has ruled that "doctor" includes doctors of medicine, osteopaths, chiropractors and chiropodists, thus excluding certain groups of drugless healers. At present the beneficiaries number about 60,000 who have qualified during the past six months with expectation of increase during coming months.

On adoption of this bill the State Department of Social Security, under which it will be administered, appealed to Washington State Medical Association for advice concerning the medical and dental care of the beneficiaries. The setup adopted places the medical and dental care under a State Medical-Dental Board, including four physicians, two dentists and one nurse, with a local board in each of the thirty-nine counties, comprising two physicians, one dentist and a representative of the county welfare department. When the actual care of patients came under consideration, there was only one available means of dispensing this service. It was realized that the existing county medical service bureaus, with their experience extending over a period of years, could immediately administer the new service, and the care of patients was placed under these organizations, thus eliminating lay supervision of medical service which has been a threatened menace whenever state medicine has been under consideration.

In addition to the medical care of the beneficiaries, the necessity has been recognized of a supervisor over hospitals, infirmaries, sanatoria and other forms of administration. Last month, in order to provide for this, Dr. James M. Flude, recently a resident of Los Angeles, was appointed Medical Supervisor of the State Department of Social Security. His responsibilities will include work with the state and county medical-dental boards in connection with medical services to recipients of old age assistance. From its experience in development of the public assistance program over recent years the Department of Social Security felt that appointment of a medical man to fill this position was highly desirable. Dr. Flude, besides many years of experience in private practice, has for nine years been western field representative for the Cancer Control Committee.

Financial support of "Old Age Assistance for Senior Citizens" will be maintained by a suitable appropriation for the biennium, of which $5,400,000 has been assigned to maintain medical and dental services for the recipients, including hospital care, appliances and all other provisions. Of this amount $2,700,000 will be devoted to payment of medical bills. This money is to be allocated to the different counties in proportion to their respective number of patients. Supervision of medical attention and payment of physicians' fees in accordance with an established fee bill are functions of the medical service bureaus. Assignment of these responsibilities to the bureaus is a distinct recognition of their efficiency and stability as demonstrated by the results of their administration in past years. Whether or not this free medical and dental service to a portion of the citizens of the state is prophetic of further establishment of state medicine is a question worthy of consideration. What will be the outcome only time can tell. It is stated that during its period of existence the experiment has proceeded satisfactorily. It is certain that this limited form of socialized medicine is an established institution in the State of Washington.

TRIBUTE TO THE SECRETARY

Foundation of the American Medical Association is the county medical society, to which every U. S. physician who would maintain his good standing in the profession must belong. He must abide by the laws of his own local organization and if he errs he must first be judged by members of that group. Fundamental, therefore, in the organization of medicine is the county society and most important in it is the one person upon whom its smooth operation depends, the secretary.

Perhaps the importance of this office has not always been given its due. Perhaps the great amount of work done by the secretary has not always been appreciated. Perhaps the business of the society goes on so smoothly that the great amount of work and self-sacrifice of the secretary are not always appreciated. If so, it would be well to stop for a moment to survey this most important position and its possibilities.

The secretary must first know everything about the society, including an intimate knowledge of its constitution and by-laws. He must know every official action taken by the society or its committees. This much demands that he attend all important meetings. He must keep records of meetings, official decisions, correspondence and membership. He must be ready at any time to provide information or aid for the office of the state organization and through it for the national body. In many cases he must also collect, hold and disburse the funds of the society. He acts as a consultant and advisor to the president and must see to it that committeemen discharge their duties and make their reports. He must often arrange for meetings and provide speakers for the program. These and many other things he must do without remuneration and often without proper appreciation from his fellows.

Frequently the secretary is done an injustice by limiting his term of office. It takes almost a year of service for one in such a position to learn the various duties or even to grasp the full meaning of all functions of the society. It would, therefore, seem wise to give the secretary opportunity to continue for at least two and preferably more years in office. Thus his experience would be of direct benefit to the society and would also make it easier for him to perform his duties in the second or subsequent years.

While the position is one which demands much in time and effort, there are few which offer as much in downright satisfaction. A good secretary may look with pride upon every accomplishment of his society and every successful meeting, realizing that each accomplishment and each success depends much on his own effort, knowledge and skill. He becomes a part of his organization as does no other officer and its every action reflects the quality of his judgment and experience. His position deserves far more in honor and credit than it is usually given. His work should have the commendation of every member of his society.

IDEAL MEDICAL MEETING

The setting for the annual meeting last month of Oregon State Medical Society at Medical Center, on Marquam Hill, Portland, offered ideal surroundings for the gathering. There was a scientific and literary atmosphere which is unusual for such a meeting, and possessing many admirable features. Entrance to the meeting was through the lobby of the medical school, which was filled with commercial exhibits and held the registration desk. The corridor extending thence to the medical library was sufficiently spacious to acommodate all other commercial and the scientific exhibits. Since the auditorium where meetings were held is located in the library, it was necessary for all in attendance frequently to pass in view of these exhibits, the entrance to the library building being closed during this session.

Special mention is deserving for the scientific exhibits prepared by members of the medical faculty. These were numerous and displayed features of the special work which the exhibitor employs in connection with professional instruction. It was noted that many visitors were usually found inspecting these exhibits.

The library auditorium is a beautiful room with acoustic properties adequate for its purposes. This is one of the distinguishing features of the library. Sufficient rooms were available for afternoon panel meetings so that any desired number could be scheduled at the same hour. Attendance at these, as well as the morning lectures by guest speakers, testified to the interest which they aroused among the goodly number at the meeting. The morning programs of papers were replete with up-to-date information that attracted close attention from all who were present.

As luncheon accommodations were available at the medical school, visitors were able to find sufficient attractions for the day's program if they so desired. The only function scheduled at the city center was the annual banquet on the evening of the final day, at which the special attraction was an address by president Frank H. Lahey of the American Medical Association, one of the guest speakers of the meeting. This was one of the largest and most enjoyable social functions in the history of the society.

Since the annual meeting of the State Society has attained such large dimensions, it cannot be adequately entertained in a small city. As the success of this meeting at the Medical Center was so outstanding, one might be permitted the query, why not establish this as the permanent meeting place for the annual state meeting.

PAY-YOUR-DOCTOR-WEEK

Any effort to induce patients to pay their doctor bills is always received with enthusiasm by the profession. In 1938 a Los Angeles bank inaugurated a "Pay-Your-Doctor-Week", to be observed this year, November 2-8. It was announced that the primary purpose was to pay tribute to members of the medical profession who continued to battle against disease and sickness when so much of the world is engaged in destroying rather than preserving life.

Sponsors of "Pay-Your-Doctor-Week" point out that the plight of the country doctor, who is often paid with farm products or will share next year's crop, has been widely publicized in recent years, while little has been said about the city doctor, whose reward for services rendered all too frequently consists mainly of long years of practice and big promises of payment sometime in the future. It is announced that banks throughout the country sponsoring this movement have funds available to loan for the purpose of paying doctor bills. Since doctors always need to have their bills paid, this form of collection is worth their consideration. Is it available in your city?

FUN FOR THE DOCTOR'S PATIENTS

For the entertainment of his patients housed in his waiting room, every doctor has on his table magazines of a more or less serious or frivolous nature to help pass their waiting moments or hours. It is said that of late some offices have been criticized for the absence of journals of a humorous nature, there being a surplus of weighty publications. To supply the need of light, humorous literature, *The Funny Bone* appears, edited by Norman Anthony. The following is his debut:

> "What with the world being shot right out from under us and mankind in the throes of convulsions of hate, the launching of this first issue of *The Funny Bone* may seem but a toothpick on a troubled ocean, but if we can inject even the tiniest ray of sunshine into a dark and gloomy tomorrow, we'll feel that we have somewhat justified our existence. There is certainly not much reason to laugh these days and yet if we are to save our sanity we must first try to save our sense of humor!"

This initial number will evoke many a laugh from the somber patient who seeks to dissipate the en-

OUR NEW PRESIDENTS

Herewith are presented photographs of the presidents of our three state associations for the coming year, with data pertaining to their education and locations during periods of practice. It is a satisfaction to the members of our medical organizations to have the opportunity of familiarizing themselves with the features of their medical leaders. Anyone who has served as president of one of our state societies has become thoroughly familiar with the fact that this position is no sinecure. To carry on satisfactorily entails much labor. Each year it seems as if the incoming president faces a larger accumulation of problems than have arisen in the past.

All members of a state medical association should extend their hearty support to their president, for only through unity and cooperation can the organization function successfully. Congratulations are extended to these presidents with the confident belief that they will find their official efforts seconded and supported by the professions of their states.

W. WELLS BAUM
(Salem)
President, 1941-1942
Oregon State Medical Society

Dr. Baum was born in Milwaukee, Wisconson, May 6, 1899. His family moved to Shelbyville, Illinois, where he attended grade and high school. He did college premedic work at Denver University and University of Illinois, obtaining his medical degree from Washington University School of Medicine, St. Louis, in 1922. During the following three years he trained in Ophthalmology and Otolaryngology in Chicago and Denver, locating for practice at Salem in 1926. Beside filling offices in his county medical society, he has been on the Council of Oregon State Medical Society during the past five years.

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nui of the waiting room. While some of the jokes smack of antiquity, for the most part they offer novelty and possess the virtue of brevity. There are brief articles on a variety of subjects, some of the titles of which are suggestive, as "Love Letters of a Hypochondriac," "Money Makes the Nightmare Go," and "The Weight of All Flesh." Numerous illustrations, for the most part quite bizarre, add to the suggestiveness of most contributions. This is a monthly publication costing three dollars a year, published by the Anthony Publishing Co., 250 West 49th St., New York City.

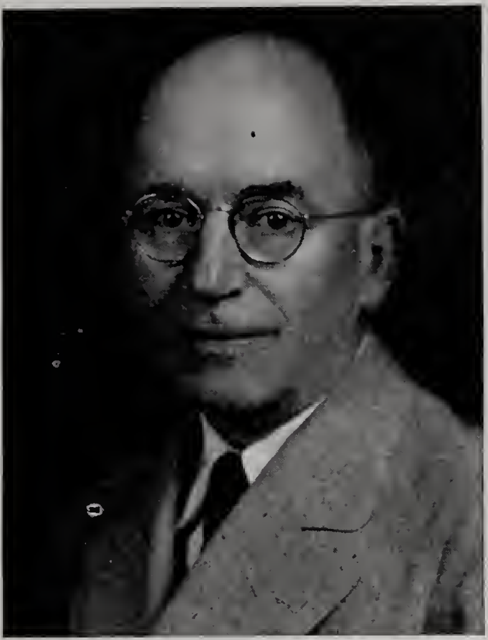
AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The second American Congress on Obstetrics and Gynecology will be held in St. Louis April 6-10, 1942, the first having been held in Cleveland in 1939. Every physician concerned with the practice of obstetrics and gynecology will be interested in this coming meeting. The program will be arranged so as to meet the needs not alone of the specialists, but for the benefit of all who participate in this form of practice. Each division of the main subject will be arranged in orderly sequence to cover all phases of each of these specialties. The program will include medical, nursing, hospital, health and educator's sections. At the head of each will be an expert in that line of practice. There will be panel discussions on all phases of these specialties. This announcement is offered a sufficient time before the meeting so that plans for attendance may be arranged.

ARE YOU MEDICALLY REGISTERED?

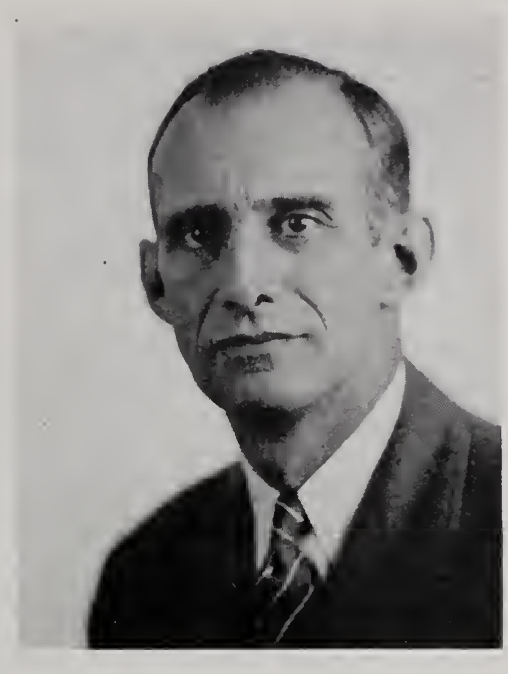
Last month a questionnaire was mailed to all doctors in the United States seeking information for insertion in the seventeenth (1942) issue of the American Medical Directory, published by the American Medical Association. The request was made that this be returned by all physicians before October 1. If you have failed to answer this questionnaire, it would be well to do so immediately, since otherwise your name may not appear in this issue. One should remember that this is the only publication which lists all the doctors of our country. If your name does not appear there, an inquirer would conclude either that you are dead or are out of the practice of medicine.

This directory includes a mine of information pertaining to the medical profession of the United States. It also covers the profession of Canada and the dependencies of our nation. It includes data concerning hospitals, medical societies, medical journals, medical libraries and practically every organization in which the medical profession is interested. If a change of address is contemplated during the coming six months, this should be reported in order to appear in the coming issue of the directory. If a questionnaire is not available, write at once to the Biographical Department of the American Medical Association, 535 North Dearborn St., Chicago, Ill.



GEORGE W. CORNETT
(Yakima)
President, 1941-1942
Washington State Medical Association

Dr. Cornett was born in Port Hope, Michigan, February 13, 1887. Later his family moved to Yakima, where he obtained his preliminary education at North Yakima High School, graduating in 1905. He received his medical degree from Northwestern University Medical School, Chicago, in 1909, following which he served his internship at St. Luke's Hospital of that city until 1911. Since 1912 he has practiced in Yakima, with the exception of eighteen months in United States Medical Corps during 1917 and 1918. Since 1922 he has specialized in roentgenology, diagnosis and therapy.



PAUL M. ELLIS
(Wallace)
President, 1941-1942
Idaho State Medical Association

Dr. Ellis was born in Beatrice, Nebraska, July 17, 1897. In 1904 his family moved to Eugene, Oregon, where he received preliminary education, graduating from the high school. For one year he was a student at University of Oregon. He transferred to University of Idaho, where he received a Bachelor of Science degree in 1922. During the next three years he taught science and mathematics and coached football and track teams at Central Valley High School near Spokane. From University of Oregon Medical School came his medical degree in 1929. After internship at St. Luke's Hospital, Spokane, he located for practice in Wallace in 1930.

ASSOCIATION OF MILITARY SURGEONS OF UNITED STATES

A cordial invitation is extended to attend the annual session of the Association of Military Surgeons of the United States, to be held in Louisville, Kentucky, and at Fort Knox, October 29-November 1. In this great emergency, when the medical care of our armed forces, as well as that of covolian population must be uppermost in the minds of the medical profession, the program being prepared for this meeting is of particular significance. Those present will include Surgeon General of the Army, Navy and Public Health Service, also Medical Director of the Veterans Administration, with other distinguished guests of the medical and dental world. The general program will discuss vitally important aspects of medical defense. As large a representation from the civilian medical body as possible is solicited.

EXAMINATIONS, AMERICAN BOARD OF OBSTRETRICS AND GYNECOLOGY

The next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, January 3, 1942, at 2:00 p. m. Candidates who successfully complete the Part I examinations proceed automatically to the Part II examinations held later in the year. Applications for admission to Group B, Part I, examinations must be on file in the Secretary's office not later than October 6, 1941. Applications for Group A must be in the Secretary's office by March 1, 1942.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) wil lbe conducted by the entire Board, meeting at Atlantic City, N. J., immediately prior to the 1942 meeting of the American Medical Association. For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

ORIGINAL ARTICLES

DIABETES: DISTURBANCE IN ENDOCRINE REGULATION OF BLOOD SUGAR*

FUNDAMENTALS OF PHYSIOLOGY OF DIABETES
CARBOHYDRATE UTILIZATION AND
CARBOHYDRATE TOLERANCE
ENDOCRINE BALANCE IN CARBOHYDRATE METABOLISM

Samuel Soskin, M.D.**
CHICAGO, ILL.

Lecture 1. Fundamentals of Physiology of Diabetes

The physiology of diabetes is more important than might be indicated by the incidence of the disease, diabetes mellitus. It happens that experimental diabetes has been a valuable tool for research on metabolism in general, and that much of our knowledge of normal and pathologic metabolic processes is based upon investigative work with diabetic animals. Recent recognition of the metabolic aspects of diseases of the anterior pituitary gland and of the adrenal cortex has increased the practical as well as theoretical importance of the accuracy of our metabolic concepts.

Modern development of the physiology of diabetes began with the work of Von Mering and Minkowski in 1889. Through their interest in the external secretions of the pancreas, they were led to perform complete pancreatectomies in dogs. The syndrome which rapidly developed in their animals included persistent hyperglycemia with glycosuria. This was followed by polyuria, polydipsia, polyphagia, loss of weight, etc. In other words, their operated animals resembled patients suffering from severe and uncontrolled diabetes mellitus. They soon developed ketosis and died in diabetic coma.

Although the relationship between diabetes and the pancreas had been suspected by earlier investigators, the investigations which Minkowski reported in 1893 really marked the beginning of what was to turn out to be an almost perfect scientific discovery. In the year 1900-1901 Opie related clinical diabetes mellitus to the hydropic degeneration of the islets of Langerhans, which he observed in certain cases at postmortem examinations. At about the same time, Ssobolew and also Schultze discovered that ligation of the excretory ducts of the pancreas in animals resulted only in the degeneration of the parenchyma of the gland, leaving the islet cells intact. This led to the recognition of the pancreas as an organ of internal secretion, and to various attempts at the use of extracts of the pancreas for therapeutic purposes.

Unfortunately all such attempts failed, or such positive results as were obtained were discredited, because the methods of hormone extraction and purification and the chemical methods for estimation of the blood sugar were as yet inadequate for the purpose. However, physiologists continued to study effects of the lack of the internal secretion of the pancreas, even though they could not demonstrate its presence. Indeed, the illusive substance was named "insulin" by Sir E. Sharpey Shafer in 1916, five years before its existence was finally proven. It was in 1921 that Banting and Best, working in Macleod's laboratory, succeeded in isolating the hormone which has marked a new era in treatment of diabetes and has made possible further advance of metabolic knowledge in general.

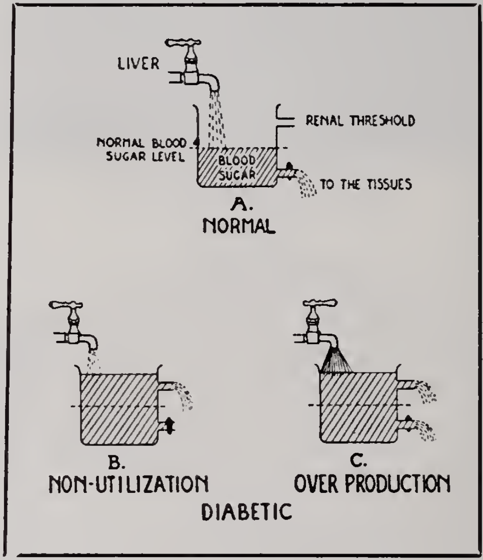


Fig. 1

Two possible explanations of the diabetic syndrome which resulted from lack of insulin were recognized almost from the beginning. These possibilities are represented by a simple mechanical analogy in figure 1.

It had been known since the days of Claude Bernard and others that the liver supplied sugar to the blood and that this sugar was utilized by the peripheral tissues. Diagram A indicates the normal state of affairs, where the liver, as represented by the tap, is pouring just as much sugar into the blood as the tissues, represented by the lower outflow tube, are drawing off for utilization. The net result of the dynamic balance between inflow and outflow is the normal blood sugar level. Diagram B represents one possible explanation of the diabetic syndrome. Utilization by the tissues has ceased, while the liver continues to pour sugar into the blood. The blood sugar rises until it reaches the renal threshhold, whereupon glycosuria results. However, the alternative explanation is that there may be no interference with the utilization of carbohydrate, as represented in diagram C. Here the supply of sugar to the blood by the liver has become excessive to the point where continued normal utilization can no longer keep pace with it. Thus hyperglycemia and glycosuria can result from overproduction of sugar, even though there is no interference with utilization. However, the nonutilization theory of diabetes soon gained the wider acceptance, although there have always been proponents of the opposite explanation. Predominance of the nonutilization theory was based on three lines of evidence, namely, the dextrose:nitrogen ratio (D:N ratio), the respiratory quotient (R.Q.) and ketosis.

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*Read before annual meeting of Pacific Northwest Medical Association, Spokane, Wash., June 25-28, 1941.

**Director Metabolic Endocrine Research, Michael Reese Hospital. Assistant Professor of Physiology, University of Chicago.

Minkowski first introduced the D:N ratio and was led by it to adopt the nonutilization theory. In brief, he found that, when he collected urine specimens from his depancreatized dogs, and analyzed them for the amount of dextrose and of nitrogen respectively, the total amount of sugar in each twenty-four hour specimen seemed to bear a definite relationship to the amount of nitrogen in the same specimen. This D:N ratio averaged about 2.8:1 for his animals, from which he concluded as follows:

a. Since nitrogen is a breakdown product of protein, all the sugar which appeared in the urine was being made at the expense of protein.

b. From the apparent constancy of the D:N ratio, he concluded that none of the sugar made from protein was being utilized by the diabetic animal, and that all of it was quantitatively excreted.

Minkowski also believed that these conclusions were confirmed by the fact that administration of a given quantity of dextrose to his diabetic animals resulted in the more or less quantitative excretion of that dextrose in the urine. This was an error in logic, because it may be seen by referring to figure 1 that the influx of an extra amount of sugar into the blood, whether viewed from the nonutilization or the overproduction theory, would be expected to result in an extra outflow of the same amount of sugar in addition to that which was already overflowing through the kidneys.

It may be calculated from the Minkowski D:N ratio of 2.8:1, that 44 per cent of the protein molecule is convertible into carbohydrate. This is, of course, not the accepted ratio upon which we calculate diets for diabetic patients today. We ordinarily consider that 58 per cent of the protein molecule is converted into sugar. This figure was derived from an entirely different D:N ratio, obtained on dogs treated with phlorhizin. Such animals have a marked glycosuria and, under certain conditions, yield a D:N ratio of 3.65:1. However, they are not truly diabetic, in that the phlorhizin acts principally upon the kidney by lowering its threshhold for the excretion of sugar. The glycosuria in the phlorhizinized animal, therefore, is accompanied by hypoglycemia instead of the opposite. But because certain cases of severe diabetes mellitus in the human gave D:N ratios more closely approximating those obtained in the phlorhizinized dog than those found in the depancreatized dog, the higher ratio was adopted for clinical use. Curiously enough, the relatively large difference in the amount of sugar which could apparently come from protein under these different conditions was never satisfactorily explained, nor at the time did it seem to arouse doubt as to the validity of both D:N ratios.

Studies of the respiratory exchange of the normal and diabetic organism apparently confirmed the conclusions drawn from the D:N ratio. If the process of oxidation in the body is compared to the burning of a substance in a bomb calorimeter, it is apparent that the amount of oxygen consumed and the amount of carbon dioxide given off in the process will depend upon the chemical nature of the substance which is being oxidized. Thus, it may be calculated that, if a carbohydrate is oxidized, one molecule of carbon-dioxide will result for every molecule of oxygen used according to the reaction $C_6H_{12}O_6+6O_2=6CO_2+6H_2O$. The respiratory quotient is the relation, expressed in volumes, between the oxygen consumed and the carbon-dioxide given off $\frac{(CO_2)}{(O_2)}$. Hence, the R. Q. for the oxidation of carbohydrate would be 1.0. In the same way it may be calculated that the R. Q. for fat is about 0.7 and for protein is about 0.8, although the latter figure involves a number of assumptions, for protein is not entirely oxidized in the living organism. The respiratory quotient of the normal animal under fasting conditions is in the neighborhood of 0.7, which has been taken to indicate that fat is the chief fuel being used at that time. When, however, a carbohydrate meal is ingested, the R. Q. rises towards 1.0. This has ben interpreted to mean that the animal is now oxidizing the ingested carbohydrate. The diabetic organism differs from the normal in that, while the fasting R. Q. of the diabetic is also in the neighborhood of 0.7, it does not rise when carbohydrate is administered. This seems to confirm the fact that the diabetic derives his energy chiefly from fat and cannot use carbohydrates.

Appearance of the ketone bodies in the blood and urine of the uncontrolled diabetic animal or human was the third basis for the nonutilization theory of diabetes. It was known that acetoacetic acid and Beta-hydroxybutyric acid result chiefly from the breakdown of fat. Since these substances did not ordinarily appear in the fasting condition when fat was being metabolized, it was assumed that they were toxic waste products, resulting from incomplete oxidation of fats in diabetes. From this arose the conception that a certain amount of carbohydrate had to be oxidized in order that fats could be burned completely, and you are no doubt all familiar with the old aphorism of Rosenfeld that "fats burn in the fires of carbohydrates." This conception, first advanced as an impressionistic generalization without any factual basis, seemed to be confirmed by the test tube experiments of Shaffer. He found that the ketone substances were oxidized slowly by H_2O_2 in an alkaline medium. But when he added glucose to the reaction mixture, the oxidation became quite rapid. In these test tube experiments, one molecule of ketone reacted with one molecule of glucose, and this was the first ketogenic-antiketogenic ratio proposed. The K:A ratio was subsequently modified by other workers, on the basis of observations in animals and humans. However, the fundamental basis for the existence of such a ratio still rested on the experiments of Shaffer, which were a far cry from the living diabetic organism.

I have thus briefly reviewed an elaborate structure of proof for the nonutilization theory of diabetes. This theory has the advantage of simplicity. It is easy to explain to a medical student or to a patient that one requires insulin in order to be able to oxidize sugar, and that when insulin is lacking because of disease or dysfunction of the pancreas, sugar cannot be burned and diabetes results. Because of its simplicity many text-books still contain no other viewpoint. Unfortunately, however, in the light of our present knowledge the nonutilization theory of diabetes is *not* the correct one.

A simple but unanswerable stumbling block to acceptance of the nonutilization theory appeared about fifteen years ago in the experiments of Frank C. Mann. It had been known much earlier, and he had confirmed the fact, that the liver was the chief source of blood sugar. My own subsequent work had shown that it was the *only* source of blood sugar. Thus, when one removes the liver of a normal animal, the sugar continues to be utilized by the peripheral tissues, the blood sugar falls steadily and the animal dies in hypoglycemic convulsions in about two hours. One might imagine that, if one were to remove the liver of a completely depancreatized animal which was supposedly not utilizing carbohydrate, no hypoglycemia would result. As a matter of fact, however, Mann performed this experiment and demonstrated that, when the liver of a depancreatized animal is removed, the blood sugar level falls just as rapidly as in a hepatectomized normal animal. The animal dies in hypoglycemic convulsions in about two hours, and like the normal animal, the depancreatized animal after removal of the liver can be kept alive only by continued administration of sugar at about 2-hour intervals. Unless one makes the rather absurd assumption that the the removal of the liver suddenly restores the ability of the peripheral tissues to oxidize carbohydrate, one must conclude that the diabetic animal was oxidizing carbohydrate all the time, but that the supply carbohydrate from the liver had been so great as to mask the amount utilized. In other words, one must turn to the overproduction theory of diabetes.

Since the "irresistible force," represented by the three classic lines of evidence for the nonutilization theory, has come face to face with the "immovable object" represented by the hepatectomy experiments, it becomes necessary to review the evidence for the nonutilization theory more critically, and in the light of more recently discovered facts. The D:N ratio put forward by Minkowski was not really a constant ratio, but was rather an average figure based on thirty-one experimental days in nine depancreatized dogs. Minkowski actually obtained individual D:N ratios which varied from 3.16 to 2.62. The record of all experimental days on any single animal showed D:N ratios much higher than 2.8:1 to begin with, the ratios then falling progressively below this figure as the death of the animal was approached. The high initial D:N ratios were discarded on the basis that they represented the pouring out of preformed glycogen stores. The later D:N ratios towards the end of the experiments were disregarded because of the poor condition of the animals at that time.

The reasonableness of these objections to the results of the first and last few days of each experiment cannot be denied, for it must be remembered that Minkowski was working before the days of insulin, and he was forced to conduct his observations on acutely diabetic animals still suffering from the effects of the anesthetic and operation. However, a closer examination of his data makes it apparent that the experimental days, upon which the average D:N ratio was based, were selected in a much more arbitrary manner than we have been led to believe by those who have trustingly accepted Minkowski's average as a physiologic constant. Figure 2 shows that the selected data in any given experimental animal began as early as the second day of diabetes or as late as the twelfth, and ended as early as the fourth day of diabetes or as late as the fifteenth day. Moreover, the days reported in some experiments were not consecutive, some being omitted for no stated reason. It must be apparent that any desired average D:N ratio might have been attained by such arbitrary selection of experimental days, picked from experiments in which the D:N ratios fell progressively from high to low values.

Dog #I	—	2	3	4	5	—	—	—	9	10	—	—	—	—	—
II	—	—	—	—	—	—	—	—	—	—	—	12	13	—	—
III	—	—	—	—	—	—	—	—	9	10	11	—	13	—	15
IV	—	—	—	—	—	—	—	8	9	10	—	—	—	—	—
V	—	—	3	4	—	—	—	—	—	—	—	—	—	—	—
VI	—	—	—	—	—	—	7	—	—	—	—	—	—	—	—
VII	—	—	—	—	—	6	—	8	—	—	11	—	—	—	—
VIII	—	—	—	—	5	6	7	8	—	—	—	—	—	—	—
IX	—	—	—	—	—	—	—	—	—	—	11	12	13	14	15

DAYS AFTER PANCREATECTOMY

Fig. 2. The days, during the diabetic life of his dogs, which Minkowski used to compute his average D:N ratio.

In 1930 I published a comprehensive reinvestigation of the D:N ratio in depancreatized dogs, using the advanced technic made possible by the discovery of insulin. This work was done on depancreatized dogs completely recovered from operation by the use of insulin, and presenting well healed and noninfected wounds. The animals were maintained on a low-calory protein diet, and the absence of islet tissue was verified by postmortem examination. In contrast to Minkowski's animals, they survived the withdrawal of insulin for as long as five weeks, during which time they usually remained bright and active, although losing weight. Observations on the D:N ratio comprised 138 unselected days in ten dogs, in contrast to Minkowski's 31 selected days in nine dogs. Distribution of the D:N values obtained is given in figure 3.

It may be seen that, although some D:N ratios similar to Minkowski's were obtained, there is nothing to indicate that such values have any particular significance. In general, the D:N ratio tended to be high at the beginning of each experiment and to show a progressive fall as the animals lost weight and their stores of adipose tissue were depleted. It is clear that, if Minkowski's ratio has any meaning, the falling ratios obtained later in the experiments signified utilization of increasing amounts of the sugar arising from protein. If, on the other hand, the later ratios represent the true extent of gluconeogenesis from protein, the Minkowski values must mean that sugar is being formed from fatty acid as well as from protein. In either case there remains no basis for concluding that sugar is derived solely from protein, or that none of the sugar so formed is utilized by the diabetic organism.

	Range of the D:N Ratio					
	Over 3.16	3.16-2.62 (Minkowski's range)	2.61-2.00	1.99-1.00	Less than 1.00	
Number of experimental days on which obtained	15	33	43	36	11	Total days 138

Fig. 3. Distribution of D:N ratios during 138 unselected days, in 10 depancreatized dogs (Soskin).

It would take us too far afield to attempt a detailed analysis of the significance of the respiratory quotient. However, it is becoming increasingly more evident that the R. Q. of the whole body cannot be regarded as the index of a single process. The orthodox interpretation of the "diabetic" R. Q. of about 0.7 involves the tacit assumption that the only vital processes which are in progress and which ultimately consume oxygen and give rise to carbon-dioxide are those associated with oxidation of fat. In other words, it is necessary to suppose that every cell, in every tissue, in every organ of the body is carrying on a single and the same oxidative process, which is an obvious absurdity.

There is very satisfactory evidence that many other processes which require oxygen or yield carbon-dioxide are taking place under those conditions. It is generally agreed, for example, that the brain derives its energy solely at the expense of carbohydrate, and yields an R. Q. of about 1.0 at all times. This high respiratory quotient must be balanced by a correspondingly low one in some other tissue of the body, if the composite R. Q. of 0.7 obtained from the whole animal is to mean anything at all. Since the new formations of sugar occurs in the liver, and since this gluconeogenesis from either protein or fat would theoretically give rise to very low respiratory quotients, it might be expected that R. Q. determinations performed on the isolated liver under appropriate physiologic conditions should yield very low values. This is the case. Several investigators have found R. Q.'s varying from 0.58 to 0.37 in the isolated or perfused livers of diabetic animals. It is apparent that the low respiratory quotient of diabetes may be just as readily explained on the basis of excessive new formation of sugar in the liver, as upon lack of oxidation of carbohydrate by the muscles.

One may add to the indictment of the respiratory quotient the very recent work which casts serious doubt upon the justifiability of using the amount of carbon-dioxide exhaled as a measure of the breakdown of nonprotein foodstuffs. Vennesland and Hastings, and Evans and Slotin have demonstrated that gaseous carbon-dioxide, whether produced by the body or released from a gas tank, may be utilized by the tissues as one of the building stones in the synthesis of intermediate metabolites.

As regards ketosis, it has been shown by many workers that the liver is the chief source of the ketone bodies, and that a fatty liver forms more ketone bodies than one which is rich in glycogen. It is also known that livers of depancreatized or phlorhizinized animals produce more ketone bodies than those from normal animals. If the nonutilization theory of diabetes were correct, it should be possible to demonstrate that the large amounts of ketone bodies being formed by the livers of diabetic animals cannot be utilized by their peripheral tissues. However, Chaikoff and I showed very clearly that the extrahepatic tissues of the depancreatized dog could dispose of large amounts of injected sodium acetoacetate with just as great facility as could the peripheral tissues of the normal dog. It was apparent, therefore, that accumulation of ketones in the blood and their appearance in the urine was due to an excessive rate of formation in the liver, which exceeded even the normally large capacity of the muscles to dispose of them.

This same conclusion has been reached more recently by Mirsky and his coworkers. Using a ketogenic extract of the anterior pituitary gland, they demonstrated that ketones so formed arise only in the liver, that insulin which suppresses this ketosis does so by acting on the liver and not on extrahepatic tissues, and that the rate of disposal of administered ketone bodies by extrahepatic tissues was independent of the amounts of sugar being utilized by those tissues. This and other evidence make it no longer possible to regard ketosis as indicating lack of carbohydrate oxidation by the muscles. It is more logical to regard the ketone bodies as essentially normal intermediate metabolites appearing during conversion of fatty acid to sugar, and accumulating in abnormal amounts, whenever the rate of gluconeogenesis form fat becomes excessive.

It is apparent from what I have said that there is no evidence that the diabetic organism is unable to oxidize carbohydrate. Indeed, as I shall describe later, there is very good evidence that ability to oxidize carbohydrate is impaired very little or not at all. This shift of emphasis from utilization by the peripheral tissues to sugar production by the liver, necessitated by adoption of the overproduction theory of diabetes, has practical, clinical value. It has long been known that in certain diabetic individuals, in whom cirrhosis of the liver has later appeared, the diabetes gradually improved or even disappeared, and some of these patients eventually died in hypoglycemia. From the point of view of the nonutilization theory this was inexplicable. For, how could one imagine that disease of the liver either restored the pancreas or enabled the tissues to oxidize sugar without insulin? From the point of view of the overproduction theory the explanation is, of course, quite simple. The phenomenon is similar to the hepatectomy experiments which I described. The liver disease gradually reduced the ability of the liver to make sugar, until the amount of sugar formed no longer exceeded the amount which the peripheral tissues could utilize. To use a favorite analogy, the thermostat on the furnace was still out of order but the house did not overheat because the furnace was going out.

Aonther practical consideration which arises from our present viewpoint is in regard to so-called remedies for diabetes other than insulin. Some years ago there was a vogue, particularly in Europe but also in this country, for the use of a drug called "synthalin." It apparently did modify the severity of diabetes in many cases. However, subsequent investigation proved that it did so by poisoning the liver. In other words, the diabetes got better but the patient was worse. The same result may be accomplished by any liver poison or by any set of circumstances which causes a severe fatty infiltration of the liver. It is, therefore, necessary, before using a substance for which therapeutic claims are made, to demand evidence that not only does it decrease hyperglycemia and glycosuria, but also that it increases the storage of glycogen in the diabetic liver, and that it does not act by damaging this vital organ.

I have devoted most of this lecture to showing what diabetes is not. I shall proceed in the next to indicate what it is.

(Lecture 2 will appear in next month's issue)

EFFECT OF ANTERIOR PITUITARYLIKE SUBSTANCE ON CARBOHYDRATE METABOLISM*

Ben Vidgoff, M.D.
Rosa Kubin, Ph.D.
PORTLAND, ORE.

Considerable experimental and clinical evidence is now at hand to show that a very close interrelationship in activity exists between the various glands of the endocrine system. This knowledge, especially in view of the increasing widespread use of endocrine therapy, would seem to make it imperative that more attention be given to the study of the remote effects on the body of these potent hormonal preparations. For instance, production of permanent diabetes in animals by injection of extracts of the anterior pituitary gland[1] has had a sobering effect on many who had formerly considered the clinical use of these endocrine substances as more or less specific in nature.

This observation naturally raises the question as to the likelihood of decreasing the sugar tolerance in man by the clinical use of anterior pituitary-like (APL) substance. We know of one case where permanent diabetes appeared, following extensive treatment of a juvenile with APL substance. The sequence of events noted in this particular patient may have been entirely coincidental; however, it is apparent that further investigation of this problem is needed. Accordingly, we undertook a brief experimental study in an attempt to obtain some further information on this subject. At this time we wish to discuss more fully our results which have been summarized elsewhere.[2]

EXPERIMENTS

Method. In order to demonstrate the effect of APL substance over a long period of time, and in order to perform repeated blood sugar curves we chose the rabbit as the test animal. We used a standard dose of insulin to elicit changes in blood sugar levels.

Twelve New Zealand rabbits were divided into three groups of four animals each. The rabbits were kept in individual cages, in a well lighted room, and fed on the stock diet of Crown Mill rabbit food plus greens twice weekly. A two week period was allowed for the animals to reach nutritional balance before the experiment was started. At the end of this period, the rabbits were fasted over night and initial control blood sugar curves studied by subcutaneous injection of unmodified insulin, one unit per kilogram body weight.

The blood, obtained from the marginal ear vein, was taken previous to giving insulin at one, two and three hours after injection. Microblood sugar estimation was done by the Hagedorn-Jensen method.[3] One animal in each group received 1000 I. U. APL substance, another received 500 I. U., and one received 100 I. U. daily. The fourth animal in each group served as a control. All medication was given by subcutaneous injections. Blood sugar curves were repeated at two week intervals for the first eight weeks after starting injections of APL substance and thereafter at monthly intervals. After eight weeks the three animals receiving 1000 I. U., and one receiving 500 I. U. were killed by injection of air. The others were continued on treatment for some seven months.

At autopsy, liver, spleen, kidney, pancreas, testes, prostate, adrenal glands, thyroid and pituitary were weighed and then placed in Zenker's solutions preparatory to sectioning.

RESULTS

Hypoglycemic convulsions were encountered occasionally in the second or third hour after administration of insulin. However, they occurred in the controls as well as the experimental animals.

Table 1 shows that, within the experimental limits of error for this type of work, there is no evidence that any decrease in sugar tolerance occurred as compared with the controls. Examination of only these initial and final curves does not give a true picture of their character, since our records indicate that several such blood sugar level studies done in between these two also showed a variation. For instance, table 2, representing the entire series of curves of one animal (rabbit No. 2) shows a varia-

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Supported by a grant from the A. M. A. Council on Research.

The authors wish to thank the E. R. Squibb Co. and the Ayerst-McKenna Co. for their generous supplies of APL substance used in this work.

[1] Young, F. G.; Pituitary Gland and Carbohydrate Metabolism. Endocrinology 26:345-351, Feb., 1940.

[2] Vidgoff, B. and Kubin R.; Effects of Anterior Pituitary Like Substances on Carbohydrate Metabolism, J. Pharmacol. & Exper. Therap., 72; 42, May, 1941.

[3] Hagedorn, H., and Jensen, B. N.: Biochem Ztsch. 1933, 135:46.

Animal No.	Weight Initial (kg)	Weight Final (kg)	Days Injec-ed	APL Sbst Received (I. U.)	Blood Sugar (mg.%)							
					Initial				Final			
					Fast	1 hour	2 hour	3 hour	Fast	1 hour	2 hour	3 hour
4	2.6	2.8	0	0	106	49	49	42	93	63	38	75
5	3.5	4.4	0	0	95	52	60	85	97	45	41	54
10	3.0	4.4	0	0	115	68	68	77	101	59	57	45
1	3.3	4.75	183	18,300	103	78	74	31	102	65	65	70
2	3.4	4.7	183	39,900	81	67	56	34	134	101	92	84
3	3.7	5.7	57	57,000	85	52	67	42	70	59	39	48
6	3.2	3.0	46	4,600	126	94	38	52	81	52	43	convulsion
7	3.8	3.6	52	26,000	113	84	87	99	81	66	70	61
9	3.1	3.1	48	48,000	113	88	67	56	106	45	50	41
11	2.8	3.8	167	16,700	115	68	57	93	101	84	66	79
13	2.6	3.0	40	40,000	120	66	68	74	108	56	48	75
14	2.5	3.9	166	31,400	118	61	61	82	90	45	47	90

Table I. Comparison of Initial and Final Blood Sugar Levels (Determined by subcutaneous Injection of 1 U/kg Insulin) in Rabbits Receiving APL Substance.

tion which most likely reflects the nutritional balance of the animal at the time the curve was done. Further studies of table 1 failed to reveal any significant alteration that might be considered to be due to the length of time of injection or the number of units given over this period of time.

The animals were in good condition at the time of autopsy. All had gained weight with the exception of numbers 6 and 7, while number 9 held its original weight. The hair and body fat were in good condition. No variation from the normal could be detected in the gross appearance of liver, kidney, spleen, testicles, prostate, adrenal, pancreas, thyroid or pituitary.

Rabbit Number 2.

Date	Weight (kg)	Insulin (U)	APL Sbst. (I. U.)	Blood Sugar (mg.%)			
				Fasting	1 hr.	2 hrs.	3 hrs.
6/27/40	3.1	3.1 U	0	81	67	56	34
7/11/40	3.3	3.3 U	5,000	124	77	70	92
7/25/40	3.2	3.2 U	10,500	114	64	59	59
8/9/40	3.3	3.3 U	16,500	117	50	52	70
8/22/40	3.3	3.3 U	21,500	120	75	59	75
9/6/40	3.4	3.4 U	27,000	102	75	61	85
9/30/40	3.8	3.8 U	29,000	111	77	65	77
10/31/40	3.5	3.5 U	31,700	141	88	86	61
11/28/40	3.5	3.5 U	34,100	119	57	66	95
2/4/41			39,900				
3/7/41	4.7	4.7 U	39,900	134	101	92	84

Table 2. Entire Series of Blood Sugar Levels Determined on One Rabbit Receiving APL Substance.

Histologically, we found an interesting comparison between rabbits 3, 7, 9 and 13 which received large doses of APL substance over a short period of time, and rabbits 1, 2, 10 and 14 which received smaller doses over a period about four times as long. In the tissues of the animals, which received the hormone in large doses over a short period of time, appeared evidences of degenerative changes such as cloudy swelling of the protoplasm, inability to take the stain, shrinkage in size of the cells, vacuolization of the cells, and decrease in size of individual units. In the liver and kidney there were also infiltration of round cells. The testicles showed fragmentation and disorderly arrangement of the tubular elements and in the prostate and seminal vesicles shrinkage in the individual glandular units with pyknotic changes in the size of the cells was noted. No changes could be detected in the pituitary or pancreas with our methods of staining.

The group of animals which received smaller doses over a longer period of time revealed no changes from the normal. We are not prepared at the present time to comment on these changes.

DISCUSSION

Theoretically there should be no cause for concern on the part of the clinician when he uses APL substance. In the first place, Young,[1] in a review of the subject, stated that fractionation of the diabetogenic substance of ox anterior lobe extracts showed that it was not identical with prolactin, thyrotropic, gonadotropic or glycotropic fractions of the anterior lobe. There is evidence that it is related to the growth hormone.

In the second place, Engle[4] demonstrated that there is sufficient difference in the effects produced by gonadotropes from pregnancy urine and placenta, and by those of pituitary origin, to make it impossible that they could be the same substance. Collip, Selye and Thomson[5] showed that gonadotropic substance from pregnancy urine and placenta did not have the effect of follicle maturation and corpus luteum formation on hypophysectomized rats, but that anterior pituitary gonadotropic substance did have such an effect.

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[4] Engle, E. T.: Ovarian Responses; Difference Elicited by Treatment with Urine from Pregnant Women and by Freshly Supplanted Anterior Lobe. J.A.M.A. 93:276-277, July 27, 1929.

[5] Collip, J. B., Selye, H. and Thomson, D. L.: Gonad Stimulating Hormones in Hypophysectomized Animals, Nature, 131:56, Jan. 14, 1933.

Engle[6] further emphasized that the gonadrotropic substance of pregnancy urine and placenta was not identical with the gonadotropic fraction of the anterior pituitary gland. In other words, the APL substance now used clinically is different than the anterior pituitary gonadotropic substance. This former substance in turn is not a factor in production of permanent diabetes in the animal.

SUMMARY

Results of this experiment show that anterior pituitarylike substance does not cause a decrease in sugar tolerance, either in large dosage over a short period of time or in small dosage over a long period of time. The histologic changes found in the rabbits which received large doses of the hormone over a short period of time were degenerative in nature. More work should be done on this phase of the problem.

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[6] Engle, E. T.: Gondatrope Stoffe im Blut Harn und in anderen Koerperfluessigkeiten. Arch. f. Gynäk., 166: 131-167, 1938.

INDICATIONS FOR GASTROSCOPY*

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In diagnosing some disorders of the stomach all methods of examination must be used to obtain the true pathologic basis of the lesion. Most important of all examinations is the history. If one will listen to his patient, he will often tell the diagnosis himself.

A general physical examination is important, for it is a well known fact that the stomach may show the predominating symptoms, when the cause is elsewhere in the body. The laboratory tests should be only those which are indicated to confirm the clinical impression or to help one follow the course of the disease. It is not necessary to do routine laboratory examinations; however, before making a diagnosis one should know the patient's blood picture, including a serologic test for syphillis, the peak of the acid curve, and whether or not there is occult blood in the stool, the patient having been on a meat-free diet for three days.

Most cases cannot be diagnosed accurately from the history, physical and laboratory work alone, but require further study which includes the two morphologic methods of examination, the roentgenologic and gastroscopic studies. Of these, gastroscopy is the older, being first used by Kussmoul[1] in 1868. Schindler[2] has made this type of examination practical by introducing the semiflexible gastroscope in 1932. Roentgen[3] discovered the roentgren ray in 1895 and Himmeter made first use of it for visualizing the stomach in 1896.

The two methods of examining the interior of the stomach are not competing for honors as to which is of more value. Schatzke,[4] in summarizing the comparative value of gastroscopy with roentgenoscopy, made this statement: "If one should be asked to renounce either gastroscopy or roentgenoscopy one would, without doubt, prefer to keep roentgenology, but the question is wrong in itself. Gastroscopy is an important supplementary method. A diagnostic problem may be difficult to solve by roentgenology and may be no problem at all for gastroscopy and *vice versa*."

This brings us to the definite indications for gastroscopy. One indication cannot be considered any more important than another, but it depends entirely upon the individual case. Besides the scientific interest that the direct inspection of the gastric mucosa holds, there will be discussed the clinical syndromes where gastroscopy is indicated.

PEPTIC ULCERATIONS

The most common ulcer being duodenal, this requires gastroscopy only when symptoms persist after the ulcer is healed, or if roentgen therapy has been used to reduce the amount of acid in the stomach. Gastric ulceration should be visualized with the gastroscope, if one of the following conditions exist:

1. The patient is middle-aged or over with a gastric ulcer.
2. The benzidine test remains positive after rigid therapy of the gastric ulcer.
3. The ulcer is in the prepyloric area.
4. There is a recurrence of a supposedly healed gastric ulcer.
5. When there is any doubt as to whether or not an ulcer is benign or malignant.

Templeton and Schindler,[5] in comparing the relative value of gastroscopic and roentgenologic evidence of gastric ulcers, found in forty-four cases that thirty-three were seen by both methods, seven were seen by roentgenologic study alone, and four were seen by gastroscopic study alone. Gastroscopy gives one a more definite idea about the surrounding gastric mucosa because of the direct visualization of the interior of the stomach.

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*Read before the Fifty-Second Annual Meeting of Washington State Medical Association, Seattle, Wash., Aug. 24-27, 1941.

[1] Schindler, R.: Gastroscopy. University of Chicago Press, p. 11, Chicago, Ill., 1937.

[2] Schindler, R.: Gastroscopy. University of Chicago Press, p. 6, Chicago, Ill., 1937.

[3] Portis, S. A.: Diseases of Digestive System, p. 46. Lea & Febiger, Philadelphia, 1941.

[4] Schatzki, R.: Comparative Value of Gastroscopy and Roentgen Examination of Stomach. Radiology, 29:488-491, Oct., 1937.

[5] Templeton, F. E. and Schindler, R.: Roentgenologic and Gastroscopic Studies in Chronic Gastritis and Peptic Ulcer. Am. J. Roentgenol., 41:354-367, March, 1939.

CARCINOMA OR POLYPOID CONDITION

These offer two indications for a gastroscopic examination: (1) In making a diagnosis of carcinomatous tissue. (2) To determine the operability of the lesion.

Moutier[6] says: "The value of gastroscopy is not the examination of unmistakable gastric tumors but establishment of an early diagnosis of cancer and determination of the operability."

GASTROINTESTINAL HEMORRHAGE WITHOUT KNOWN CAUSE

Hemorrhage may be evidenced clinically by either vomiting of coffee ground material or the passage of tarry-black stools. Only a few cubic centimeters of fresh blood in the stomach are necessary to color the entire contents of vomited material. Winter and Egan[7] experimentally determined the least amount of hemorrhage necessary to color the stool black and found it to be 60 centimeters. Occult blood found by the benzidine test is sensitive one to three million. There is no practical criterion by which the degree of hemorrhage can be estimated. However, regardless of the methods used in determining the amount of hemorrhage, if it cannot be shown by roentgenoscopy what the cause is, then gastroscopy is indicated. Robertson[8] of the Mayo Clinic concluded that capillary hemorrhage was the most frequent lesion in the stomach. These are best seen by gastroscopy.

COMPLETE ACHLORHYDRIA

This must be proved by histamine stimulation.[9] Though it is recognized that acid must be present for the formation of peptic ulceration, ulcers of the gastric variety have been found with an achlorhydria.[10] The anatomic foundation of anacidity seems definitely to have an inflammatory basis.[11] Atrophic gastritis is the predominating type of gastritis found in achlorhydria, and it is considered by some as a precancerous lesion. About sixty per cent of the cases of cancer of the stomach show an achlorhydria proved by histamine stimulation.

GASTRIC SYMPTOMS AFTER OPERATIONS ON THE STOMACH

Since the hazards of major operations have been definitely decreased, surgery on the stomach has increased. This is as it should be; however, there are many operations on the stomach which do not entirely accomplish the desired results. There is always an alteration in the motor and secretory mechanism of the operated stomach. Often the distress after operation is due either to action of the artificial stoma or to disturbed secretions. Besides recurrent gastric and jejunal ulcers, there is the postoperative or surgical gastritis[12] which is the most common cause of gastric distress following operations on the stomach. This usually can be diagnosed only by gastroscopic examination.

UNEXPLAINED GASTRIC SYMPTOMS WITH NEGATIVE ROENTGREN STUDIES

This is designated as roentgren studies because it should include fluoroscopic observation from the time the barium enters the esophagus until it is beyond the duodenum, roentgenograms, and when necessary spot films. A great many gastrointestinal patients will have negative roentgenograms and their distress will sometimes be directed to the colon or gallbladder. It is useless to gastroscope such patients. The ones who should be gastroscoped are those who have complaints that could seemingly come only from the stomach. Such complaints are pain which is relieved by food, milk or soda, gnawing sensations in the upper abdomen, or intermittant epigastric distress running up toward the sternum, and those who complain of feeling full after a small intake of food. Those who have a gastric neurosis with negative roentgenograms should be gastroscoped and will often show some type of gastritis. If the examination is entirely negative, it is the best objective evidence for reassuring the patient that his complaint is without organic basis.

One should not think that gastroscopy is the final answer to all gastric diagnosis. It should be pointed out that there are some blind spots; for example, toward the pylorus on the lesser curvature and on the posterior wall at the cardia. There are also some patients who have such sensitive stomachs that, upon introduction of the instrument, the stomach goes into a spasm, and the gastric wall cannot be visualized.

The definite contraindications for gastroscopy are anything which will stop the gastroscope from entering the stomach, such as cardiospasm, obstruction or varices of the esophagus. Other conditions, such as aortic aneurism, angina pectoris or decom-

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6. Moutier. F.: Treatment of Cancer and Allied Diseases, Vol. II, by Pack, G. T. and Livingston, E. M., pp. 959-968. Paul B. Hoeber, Inc., New York, 1940.

7. Winters, W. L. and Egan, S.: Chicago Society of Internal Medicine May 22, 1939.

8. Robertson, H. E.: Ulcerative Gastritis and Residual Lesions. J. A. M. A., 112:22-26, Jan 7, 1939

9. Palmer W. L., Kirsner, Joseph B. and Nutter, P. B.: Spontaneous Variations in Gastric Secretion in Response to Histamine Stimulation. Am. J. Digest. Dis., 7: 427-431, Oct., 1940.

10. Palmer, W. L. and Nutter, P. B.: Peptic Ulcer and Achlorhydria. Arch. Int. Med., 65:499-509, March, 1940.

11. Schindler, R., Nutter, P. B., Groom, H. E. and Palmer, W. L.: Anatomic Foundation of Anacidity. Arch. Int. Med., 66:1060-1078, Nov., 1940.

12. Nutter, P. B.: Acute and Chronic Gastritis. Northwest Med., 40:169-172, May, 1941.

pensated hearts, should not be gastroscoped.

In summarizing the indications for gastroscopy, its practical use is in the diagnosis of obscure and difficult gastric pathology, and in following the course of diseases of the stomach while under therapy. Then, not least in importance, is its use in diagnosis of conditions of the gastric mucosa which are too fine or too small for roentgen study to show.

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SYMPTOMLESS PERIOD OF BRONCHIAL FOREIGN BODIES*

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The signs and symptoms of an aspirated foreign body justify periodic review before the profession at large because soon after the aspiration of a potentially lethal foreign body, there nearly always ensues a symptomless period, during which the significance of an occasional wheeze or cough may be overlooked. More often than not the family doctor is not consulted during this period, but it is not unusual to hear that a physician acquaintance, whose special field of endeavor is far removed from consideration of chest complaints, has been quizzed casually on the street. Thus he is made to share some responsibility with no opportunity of conducting a physical examination or even securing an adequate history.

My objective is to review the facts of the symptomless period after aspiration, but it is also worthy of emphasis to state that the history, even in the case of intelligent adults, may be unreliable. Foreign bodies are unknowingly inhaled during periods of emotion, excitement, in automobile collisions or even slight falls and during anesthesia. Alcohol in adequate dosage produces a degree of anesthesia. In the case of little children, it is obvious that there may be no history whatever.

Cough and gagging usually are experienced at the moment of aspiration but this is sometimes denied. It seems unbelievable that a shingler could inhale a full-sized shingle nail and not cough at all. Such patients are presented weeks, even months after such incidents and they may be entirely free of symptoms when presented; they are in the all important symptomless interval.

The length of this period is extremely variable and depends on the character, size and shape of the foreign body. In the case of a bronchus completely obstructed by an irritant vegetable mass, the symptomless interval may be a matter of moments, even seconds, whereas the nonirritant metal nail may be quietly resident for months, even years, if there is left a by-pass for transfer of air and lung secretion. Metal is characteristically nonirritating to the bronchial mucosa, whereas nut kernels typify the most violent of vegetable irritants. Metal is opaque to roentgen ray and there is no difficulty experienced in diagnosis, if only the opportunity of roentgen study is afforded.

Vegetable material casts no roentgen shadow but its aspiration is followed by a train of symptoms which have been meticulously recorded by careful observers. A "half of a half" of a peanut kernel located in the right main stem bronchus of a two year old might be studied as typical of one of the most dangerous and unfortunately common bronchial foreign bodies. The initial question, "why is a child without molar teeth, given peanuts," is best dropped. The parents usually fall into one of two groups; they are either too ignorant to appreciate the gravity of the situation or hysterical with remorse because they do.

Contrary to lay opinion, less than three per cent of bronchial foreign bodies are coughed out again. Neither do the peanuts disintegrate or "digest" in the lung. Peanut kernels are usually angular and during the symptomless interval after aspiration the air passes by during respiration. During this period the examiner may hear one or two nondiagnostic rales at the right base.

The all important and usually the only sign at this stage is elicitation of an asthmatoid wheeze at the end of forced expiration. This wheeze is heard either with the ear or stethoscope bell at the open mouth. It is clearest after secretion is expelled by coughing. The mechanism of production is probably due to the passage of air by the foreign body as it narrows the bronchial lumen. Presence of this wheeze always suggests bronchial foreign body and, if reported by the parents at the curb-stone consultation, dictates a policy of "viewing with alarm." Advice to hasten to their family doctor for immediate examination and continued observation should be given.

If a peanut kernel is present, it will make its presence known in no small way and probably soon. As previously mentioned, nuts are extremely irritant to the bronchial mucosa and they rapidly induce annular mucosal swelling. Soon the airway is obstructed, at first during expiration only, because the caliber of the bronchus is greater during inspiration than at expiration. A check valve mechanism is thus set up which traps the air in the lung distal to the obstruction. This condition is given the name "obstructive emphysema" and heralds the end of the symptomless period. The examiner now notes on the involved side a limitation of expansion, a tympanitic percussion note and diminution of breath sounds.

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*Read before a meeting of Multnomah County Medical Society, Portland, Ore., Feb. 5, 1941.

Careful roentgen study will demonstrate a to and fro shift of the heart and mediastinum. A film at the end of inspiration shows normal position but the comparative film snapped at the end of expiration demonstrates the "pushing over" of the mediastinal contents to the free side by the trapped air in the obstructed lung. The immobile diaphragm on the involved side is visualized both at fluoroscopy and in comparing inspiration and expiration films.

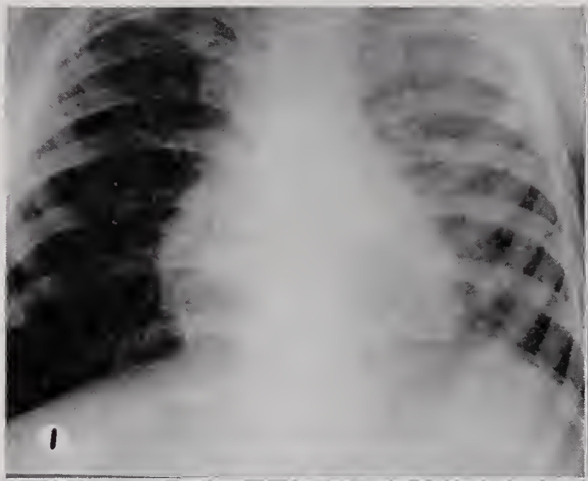

Fig. 1. Nonopaque almost symptomless foreign body. Picture at peak of inspiration.

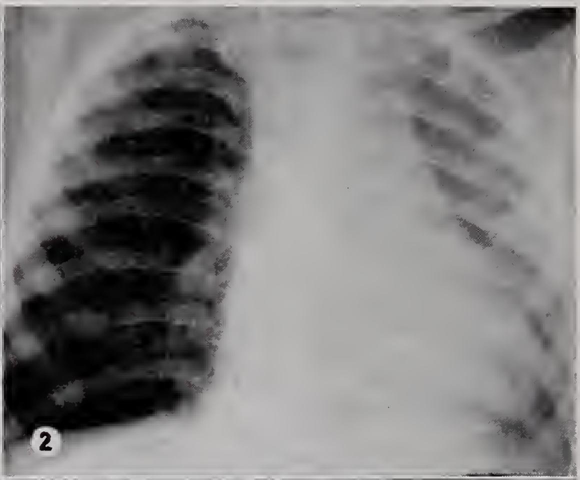

Fig. 2. Same case. Picture at end of expiration.

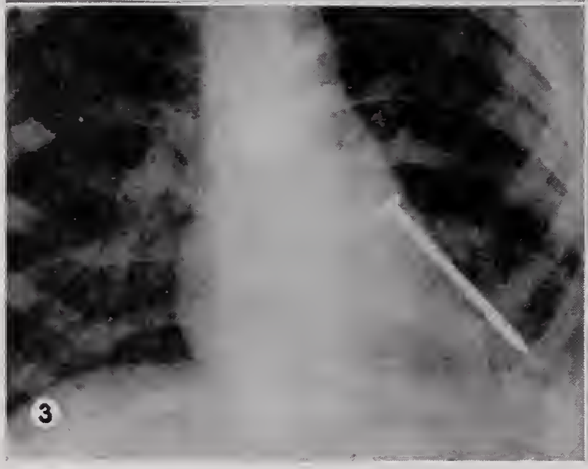

Fig. 3. Symptomless foreign body. Nail in place four days.

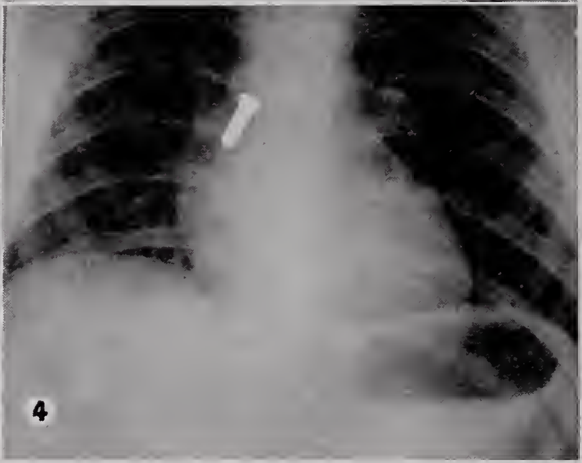

Fig. 4. Symptomless foreign body. Rivet in bronchus.

Atelectasis follows the stage of obstructive emphysema. The continued mucosal swelling buries the foreign body so that even with the increased caliber of the bronchus at inspiration, no air passes by the intruder. Secondary infection takes place rapidly and high fever, toxemia as well as dyspnea and prostration are added to the examiner's notes at this stage.

The physical findings are those of massive collapse, namely, limited expansion, impaired percussion and absence of breath sounds on the invaded side. Compensatory emphysema may be present on the free side. The mediastinum is drawn over to the involved side and this position is fixed entirely independent of the respiratory cycle in direct contrast to the to and fro shift noted during the stage of emphysema.

It hardly needs mention that this patient is a poor surgical risk and, further, it should take little imagination to picture the extreme difficulty in grasping and removing the imbedded kernel. The forceps must be operated through a bronchoscope, through which the operator must see and through which the patient must breathe. The maximum tube diameter available for a two year old child approximates that of a common lead pencil. Removal of any bronchial foreign body is plenty difficult and it should be easy to picture the extreme difficulty experienced after the kernel is impacted and surrounded by swollen and bleeding mucous membrane.

If the foreign body is not removed, the child may or may not survive the acute disease associated with massive collapse. If it does, bronchiectasis, chronic lung abscess with or without empyema may follow. The clinical picture of these processes needs no elaboration but they are mentioned to emphasize the objective of this paper which is to review the fact that, following aspiration of a foreign body, there is nearly always a period free of symptoms or a lull accompanied by one important sign, a wheeze heard at the open mouth, and that during this period careful examination will result in diagnosis sufficiently early so that removal of the intruder is facilitated before the sequelae occur.

The to and fro mediastinal shift which is characteristic of obstructive emphysema is well illustrated in the folowing case.

Case 1. A peanut kernel lodged in the right main stem bronchus acted as the check valve. The increased bronchial diameter on inspiration allowed air to pass by (fig. 1). Since at expiration the bronchial lumen is narrowed, air was trapped in the right lung distal to the foreign body (fig. 2). At the end of expiration the emphysematous right lung pushed the heart over to the left.

With atelectasis, there is no respiratory to and fro mediastinal shift and the foreign body will be found on the side to which the heart is shifted, whereas with obstructive emphysema, the offender will be on the side from which the heart moves at expiration.

Metallic foreign bodies, less dangerous as a class than nonopaque vegetable material, are visible by roentgenography and their presence is readily verified, providing opportunity for roentgen study is afforded.

Figures 3 and 4 illustrate that even large bronchial foreign bodies may be resident for a period, during which symptoms are minimal. Note particularly that there is almost no reaction about or distal to the large nail (fig. 3) yet it had been in place four days when this picture was made. Pneumonia and constitutional symptoms were not yet present. The child coughed only occasionally but a wheeze could be heard with the stethoscope bell at the open mouth. This is an extremely significant physical finding in the diagnosis of nonopaque bronchial foreign body.

INFLUENCE OF SUGGESTION ON SIZE OF BRONCHIAL LUMEN

BRONCHOSCOPIC STUDY AND REPORT OF ONE CASE[*]

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A great many physicians and surgeons disagree with the psychiatrists who maintain that bodily function can be altered by suggestion. Nevertheless, this skeptical and critical viewpoint is justifiable as long as the psychiatrist fails to prove with conclusive, objective evidence that there is a definite relationship between the suggestion in question and the effect produced. In most instances it is impossible to obtain such proof.

But in the case herewith reported, by means of the bronchoscope we were able to note a prompt and definite change in the size of the bronchial lumen in response to situations which we proposed. Mere mention of the patient's likes and dislikes called forth unmistakable alterations in the bronchus.

Pleasant and acceptable proposals caused the bronchus to widen; unpleasant suggestions caused bronchial narrowing; and subjects, which to the patient were inconsequential, elicited no bronchial change.

CASE REPORT

A man, aged 75, recipient of $40 a month "old age pension", had been well until relief authorities discovered that he had a savings account in excess of the amount that entitled him to state assistance. When he learned that he was to be denied the continuance of the pension he suddently developed difficulty in swallowing. Solids would not pass at all, and at times even a liquid diet failed to enter the stomach.

The esophageal symptoms had already been present for three weeks when he was referred to me with a fluoroscopic and barium-roentgen plate diagnosis of "esophageal carcinoma involving the lower third of the organ, diaphragmatic hiatal esophageal diverticulum, and aneurysm of the aortic arch."

A direct esophagoscopic examination was indicated. This being performed under local anesthesia showed a spasm which extended the full length of the esophagus and closed off the lumen. And at the site where the roentgenogram had showed the deformity, the spasm was particularly resistant but could be passed after the use of bougies. There was no esophagoscopic evidence of carcinoma, stricture or ulceration, but the spasm itself had caused considerable congestion.

When this patient was asked to imagine how he would feel "if he could get on the pension roll again", I could observe through the esophagoscopic instrument that the spasm disappeared and the lumen opened. Consequently, I disgnosed the disturbance in swallowing as a functional-emotional spasm [1-4].

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[3] Faulkner, W. B., Jr.: Cardiospasm; Report of Case and Discussion of Improper Treatment West. J. Surg., Obst. & Gynec., 48:561-563, Sept., 1940.

[4] Faulkner, W. B., Jr.: Effect of Emotions upon Diaphragmatic Function. Observations in Five Patients. Psychosom. Med., 3:187-189, April, 1941.

Despite the fact that the man had no pulmonary complaints I wondered whether a similar spasm might not be found involving the tracheobronchial tree, and if so, whether this would respond to suggestion. Accordingly a bronchoscopic examination was made.

Bronchoscopy with local anesthesia. The trachea appeared to be about normal in size. The carina or bifurcation moved one-half the usual amount with respiration, but when the patient was directed to take a deep breath, it was seen that the carina could move to the full normal extent.

The lumen of the right main bronchus was only one-third to one-fourth the normal caliber, and like the carina, showed definite limitation of normal movement; that is, the customary luminal widening on inspiration and narrowing on expiration were absent. Similar changes were noted in the left bronchus, but for the purposes of this study I decided to limit observations to the right main bronchus, and, therefore, all changes herein mentioned refer to this bronchus.

Asked to imagine how he felt "when his candidate won the recent presidential election", the bronchus immediately returned to an approximately normal size and showed the normal inspiratory widening and expiratory narrowing which were previously lacking. Ask to imagine how he would have felt "if the opposite presidential candidate had won", there was no alteration in the bronchial status which had just previously been established.

On first sight this might appear to be a contradiction to the esophageal observations [5-6] that almost universally a relaxation and widening of the lumen occur with pleasant and wished-for suggestions, while a spasm or narrowing is called forth by the thought of undesired incidents or proposals. But in this case it must be remembered that both candidates had promised continuance of relief and old age pensions. And that was the patient's chief interest.

I next asked him to imagine "how he felt when his new Congressman won." The bronchus opened even wider than it did in response to the presidential results. This changed bronchial status was immediate and unmistakable. But when asked "how he would have felt if his Congressman had lost", the bronchial lumen immediately narrowed so that the lumen was but one-third normal size.

Asked how he would feel, "if he were promptly restored to the old age pension list, and were assured that he would positively remain on it for the balance of his life without further repeated social service investigations", the bronchus opened widely, breathing became deep and rapid, and normal inspiratory and expiratory bronchial movement returned. But at the thought that "he might never again receive the pension, and instead, at his age be forced to attempt to find employment when so many were already unemployed", the lumen again narrowed decidedly, the bronchial walls quivered, and breathing became short, labored and rapid.

Thereafter, another pleasant suggestion was proposed and the opposite picture ensued, that is, the bronchus opened widely and the breathing became normal. At this point he was asked "if he was ever lonesome." This question caused an instantaneous change in the bronchus, but of a different nature from any of the other bronchial reactions that I had observed in this patient. It was not a spasm with lumenal narrowing, neither was it relaxation with widening of the lumen.

The whole bronchus became flabby. Its walls collapsed in an anteroposterior direction, and only a horizontal slitlike aperature marked the site of the former circular lumen. This flabby, apparently paralyzed bronchus then remained stationary and uninfluenced by respiration. Accordingly, on a basis of the objective bronchoscopic findings, I may have to agree that an elderly person's dread and fear of loneliness may be paralyzing in its effects.

DISCUSSION

Within fairly wide limits and with similar groups of people I would expect similar suggestions and proposals to call forth similar emotions and produce similar bronchial responses.[7]

On the other hand, I would expect dissimilar groups to react in dissimilar ways to a given situation. Consequently, a suggestion that might make one man want to fight, might cause another to seek flight, leave a third paralyzed with fear, a fourth unmoved, and a fifth highly amused. It is not suggestion itself but rather the kind of emotion aroused that determines the type of bronchial response.

The openmindedness, imaginativeness and interests of the patient must also be appraised. Subjects in which he has no interest ordinarily arouse no emotions and no physical response. And situations, that are so far beyond the scope of his imagination that he cannot possibly conceive of their ever happening to him, may elicit no bronchial response at all, annoy him and cause bronchial narrowing, or appear so ludicrous as to cause laughter and bronchial widening.

Furthermore, a person, whose thoughts are strongly of one nature while we are trying to induce a different trend of thought, may show a bronchial response that is a composite of his own stimuli and ours, of his alone, or of ours alone.

The bronchial response to a proposed situation and its ensuing emotion is usually instantaneous. Yet, here again, there are a few exceptions. In some cases there are varying time intervals between the proffered suggestion and the bronchial reaction, just as there are varying speeds of comprehension among different groups of people on any subject.

CONCLUSIONS

1. It was noted, on bronchoscopic examination, that the presence of bronchial spasm or relaxation was determined by emotional factors.

2. Thoughts of insecurity and frustration brought about bronchial spasm and narrowing of the bronchial lumen; suggestions of a pleasant and desirable nature caused bronchial relaxation.

3. The clinical application of these physiologic facts should revolutionize the treatment of bronchial spasm and associated asthmatic conditions.

384 Post Street

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5. Faulkner, W. B., Jr.: Objective Esophageal Changes due to Psychic Factors. Esophagoscopic Study with report of 13 Cases. Am. J. M. Sc., 200:796-803, Dec., 1940.

6. Faulkner, W. B., Jr., Rodenbaugh, F. H. and O'Neill, J. R.: Influence of Emotions upon Esophageal Function. Comparison of Esophagoscopic and Roentgenologic Findings. (Accepted for publication in Radiology.)

7. Faulkner, W. B., Jr.: Bronchial Spasm. Bronchoscopic Observation of Changes due to Psychic Factors. Report of One Case, Pacific Coast Med., 8:22-24, May, 1941.

CANCER FROM PATHOLOGIST'S ANGLE*

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The Department of Pathology at Stanford deals with the surgical as well as the autopsy material from two large clinics and two private hospitals. Each year two or three assistants who are being trained by the Roentgen Department and four or five young men being trained by the surgeons spend four months to a year working in the department. In this way the two divisions, radiology and surgery, whose procedures are most often determined by a pathologic report, receive a constant infusion of men who have recent experience with the conditions under which such reports are written. Such men have some familiarity with the limitations and accuracy of the methods of histologic diagnosis as practiced in our own school. In spite of this, we have weekly conferences with the radiologists and surgeons to take up special cases and work out by discussion what really lies behind the scraps of paper which bring us a brief summary of the case, or give our clinical colleagues a description of the tissue and a diagnosis.

Since most of these conferences and most of the problems of mutual interest to clinicians and pathologists are concerned with cancer, I think it may be worthwhile to review today this whole question as a pathologist sees it, hoping that by such a trip through another man's back yard some of you also may have a clearer idea of his limitations and his possibilities.

From his surgical colleagues the pathologist receives specimens varying in size from a smear of cells, obtained by aspirating juice through a needle, on up through minute biopsies of skin, lip or cervix, to huge masses of breast and axillary tissue, or even a whole limb. When curettings of bone or of uterus are received, the tissue may be concealed by fifty times its bulk of blood clot; small biopsies appear as round masses, and in cutting sections it is just chance whether the cut will be at right angles to the epithelial surface, or tangential, in which case signs of invasiveness become unreliable.

With the tissue the pathologist receives a more or less fragmentary summary of the clinical features of the case. If the clinician wants to get the most out of his pathologic consultant, he will see that such summaries are as accurate and complete as possible in all cases where any difficulty in diagnosis is anticipated; in the case of bone tumors he may send copies of the roentgenograms. He will also see that the tissue is in the best possible condition, fixing bits of bone or brain tumor in Zenker's fluid, making deep parallel incisions in large masses and fixing at once in formalin to prevent drying and insure preservation of tissue. He will take curettings into weak acetic acid, such as the fluid used for diluting blood for leukocyte counts, and separate tissue fragments from blood before fixation. He will put small biopsies surface down on a bit of paper before fixation or paint the skin with fuchsin before making the biopsy so that the fragment can be blocked for section at right angles to the surface.

If he is doing a biopsy he will remember that enough tissue from the right place is the foremost consideration. This is particularly true of biopsies on muscle or on lymph nodes, where the desire to achieve a good cosmetic result not infrequently leads to an erroneous diagnosis. An adequately large piece of tissue from the right place must be obtained; in the case of Hodgkin's disease this means as large as possible a mass of the oldest and largest nodes; satellite glands or those from the back of the neck may have no specific tissue changes, or misleading nonspecific changes. In pedunculated masses the base must be sectioned to see if there is invasion.

Let us suppose our pathologist has received his material in the best possible condition, that the sections have come through in good order, and that he has selected the best sites for study when dissecting the gross material. He has a correct and full clinical summary available and is about to go to work with his microscope. To make it a bit more dramatic, one could have him next the operating room, with frozen sections, while the operating team stands by waiting his verdict. He looks quickly over all the available sections, and either finds a simple unequivocal histologic picture, or one which at first glance seems difficult but further study soon clears up nicely, or realizes from the start that the problem is a difficult one. In the first case we need follow him no further; he merely describes his findings, makes his diagnosis, and closes the case. In about one per cent of these, after excluding all the routine tissues such as appendices, hemorrhoids, etc., it will turn out that an erroneous diagnosis has been made, either through not having tissue from the proper site or for other reasons.

In the next group which causes a bit of hesitation, with careful scrutiny of the material and careful study of the clinical record, about three per cent will be incorrectly diagnosed, whereas from the gross appearance and history the error probably would have been three times as high, say ten per cent. Then we come to those where there is from the start serious difficulty, where special stains, or more sections are desirable, and the final diagnosis is made with some hesitation. Here the error will be perhaps ten per cent, whereas clinical judgment alone might have given only twenty or thirty per cent of error. Also, in groups two and three, there almost certainly will be a fair percentage of disagreement among the most skillful and experienced surgical pathologists. Some will be hesitant, some certain, but certainty does not mean freedom from error.

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*Read before the Forty-ninth Annual Session, Idaho State Medical Association, Sun Valley, Ida., June 18-21, 1941.

The problem which faces the surgical pathologist is one with which all of us are familiar; it is the same as that of the hunter, the fisherman, the victim trying to pick out his assailant from the police line-up. In the words of the late Dr. Councilman, Professor of Pathology at Harvard, the problem can be summed up, "where have I seen that face before?" The fisherman drops his fly in a certain way on bits of water which his experience teaches him should yield a strike, the hunter picks his terrain and moves across it on the basis of his previous experience with the game he is after. We can analyze as much as we want, talk about noses, eyes, chins, about ripples, brooks and ponds, about meadows and timber, but in the end most often our judgment is subconscious.

Mitotic figures, absence of basement membrane, variation in size and position of nuclei all sound very well, but the experienced pathologist does not consciously think of these things, he either recognizes the face at once, is fairly sure of it after a moment's reflection; or he does not know, and escapes either by trying out Mr. Jones or Smith on a percentage basis, by giving up completely, or by studying a file of photographs and descriptions in his textbooks and references, and finally choosing a name, right or wrong, to go with the face.

It is extremely important for the physician to know exactly how his pathologist works, what his capacity and limitations are. He may be a wizard on breasts and uteri, but rusty on brain or bone. His reports may all be worded with equal assurance and certainty, whether he is right or wrong, whether he knew he was in doubt or was perfectly at ease. Of course, what the surgeon or radiologist wants is a reliable report, one which will take a load off his shoulders; he does not like doubt or uncertainty after he has relied on or the patient has paid for an unerring and oracular opinion. I suppose many pathologists believe they should take full responsibility, give a final and assured diagnosis in every case. Lack of confidence is a serious fault, one which rouses anxiety, often needless anxiety in the patient and his relatives. But we must realize, when these criminals are brought in and confidently identified by the pathologist who has studied their faces, that the identifications are not all of equal merit.

B. may be a wizard on Irishmen and Greeks, but perhaps cannot tell one Filipino or Chinese from another. C. may always be certain of his man, but have a systematic error which makes all his Italians and Negroes get wrong names. D. may be just as indignant if we doubt his word about an Eskimo, which he had a tough time trying to figure out from the book, as about neighbors whom he sees every day. It is not always best to have a pathologist who never lets a shadow of doubt creep into his reports and is most insistent that any diagnosis he has made must stand.

Here I would like to introduce an anecdote about my distinguished predecessor, Professor Wm. Ophüls, for many years the leading pathologic diagnostician in Western America. One day the radiologist called him up to say that a patient on whom he had diagnosed carcinoma of the thyroid had been sent in for treatment, and he would like to have him review the slides before he began. In this case the diagnosis, made from an almost total thyroidectomy, had been made without any hesitation; however, on reviewing it and getting more history Dr. Ophüls changed his diagnosis to chronic thyroiditis. The patient received no further treatment and was free from tumor ten years later.

Incidents of this sort show us how necessary it is for the pathologist to be willing to admit possibility of error, to make further study, and not feel that any case is settled just because he has spoken. Experience in a pathologist means something more than years or many sections; it means thorough follow-up and a capacity for reeducation. It also means close touch with the growth of pathologic experience and literature.

So much for the conditions under which pathologists work, and the importance to the physician of understanding and cooperating with his pathologic consultant, not accepting him as an infallible prophet but watching him become more skillful or more dogmatic and getting as much help as possible from his study of the case. It would, perhaps, be ideal if the pathologist wrote out one opinion, purely anatomic, without any knowledge of the clinical features, and then added a note, if necessary, after reading the clinical summary. Then the surgeon would know precisely how far the diagnosis was based on the sections, and how much on facts which he himself could use and interpret.

The chief mutual problem of the pathologist and his surgical and radiologic friends is tissue proliferation and the distinction between nonmalignant neoplasm, malignant neoplasm (cancer) and all the nonneoplastic proliferative processes. We cannot prove today whether or not Hodgkin's disease or certain cases of leukemia are cancerous processes, metabolic or infectious diseases. We cannot say whether the local tissue proliferations—some of the leukoplakias of mucous membranes and hyperkeratoses of the skin, nodular hyperplasias of the thyroid and prostate — are nonneoplastic processes similar to calluses, or are extremely benign local papillomas and adenomas. The less malignant a tumor is the less does its structure and chemical behavior or its growth in the uniform medium of tissue culture differ from that of normal tissue, and the more difficult does it become to say whether it possesses those properties of independent growth, of continual or invasive growth, of recognizably atypical growth in tissue culture, which the pathologist considers convincing proof of neoplastic nature.

As to the distinction between benign and malignant neoplasms, we know exactly where we are in theory; those that grow by expansion inside a capsule of stromal material are benign, those which invade the surrounding tissue, or colonize distant sites after breaking into the lymph or blood stream are malignant. If we see such colonies or such invasion, we know we are dealing with a malignant process, but failure to detect it is not proof of benign character. Because we know a man well and always find him agreeable does not mean that he never loses his temper; it merely means we have not seen him do it.

Tumors of thyroid of extremely benign appearance and no demonstrable local invasiveness may kill by bone metastasis, while highly malignant looking tumors of the cervix and the bronchi may remain noninvasive for years. Marked lack of maturity, numerous mitotic figures, large nucleoli and pleomorphic nuclei suggest malignant tumors responsive to radiation, but these rules are frequently broken. Some gastric tumors may be highly malignant, even though well differentiated and poor in mitotic figures, and others, extremely undifferentiated, may remain localized to the mucosa and submucosa until death from local tumor growth.

In the end, the pathologist must learn each tumor in each organ or tissue as an individual with predictable behavior, or rather predictable variability of behavior. A smooth muscle sarcoma of the uterus may exactly duplicate the structure of one of the bowel or esophagus, and yet be far more invasive and malignant. Carcinoma of the bowel, though much less invasive beyond the bowel than cancer of the stomach, may be extremely destructive in the bowel wall, even though it forms beautiful colonic glands with uniform basally placed nuclei and rare mitosis. The nonmalignant proliferations—the keratoses, erythroplasias, leukoplakias, the nodular hyperplasias of liver, prostate, thyroid, adrenal or breast—these can be recognized and named with great accuracy, but we must not deceive ourselves into thinking we know whether or not they are neoplasms. Warts and condylomas we regard as nonneoplastic proliferations, even when we call them papillomas, for they regress or disappear when the irritant, virus or organism which evoked them has been destroyed. These are rarely sites of cancer formation, but all the other processes mentioned might predispose to cancer to a greater or less degree.

One cannot leave this question without stating a personal creed on the nature and causes of cancer, admitting this to be personal faith or agnosticism, since scientific proof is inconclusive. While some of the keenest students, led by Peyton Rous, believe cancer to be a virus disease of the tissue in most if not all cases, I personally feel that viruses play no part in most cancers and cannot be regarded as sole causes of any human cancer. They may, however, act as carcinogenic agents in some species, and perhaps in some cases even in man. We know of many pure chemicals which can evoke cancer, usually after a long latent period. Since chemicals varying widely in structure may act as potent carcinogens, and yet a close chemical relative or even an optical isomer of a carcinogen may be inert, it is quite possible that of two closely related viruses one might be carcinogenic, another harmless. The virus of warty ears in cottontail rabbits causes cancer in other species; the virus of the human verruca is harmless in man and its carcinogenic potency has not been tested in other anthropoids.

I believe that many true tumors, neoplasms, behave like a tissue mutant, a cousin or brother of the cells around them, but no longer a twin brother genetically identical. This seems to me the lesson taught by the Lewises' study of tumors in tissue culture and by tissue transplants and genetic studies in mice. This view helps to explain tendency to familial cancer as well as frequency of ovarian and testicular tumors or tumors in places where proliferation is very active. It is possible that in some instances cancerous tissue develops as a familial disorder of tissue differentiation, similar to fragile bones or exostosis. Such a theory would best explain familial and bilateral retinoblastoma.

I believe this fundamental and abrupt change may occur spontaneously, but it is often precipitated in man by certain types of chronic irritation or of involution with atrophy, and in animals by viruses and a wide range of organic chemical compounds. Cancer apparently represents a sharply defined condition, but there are intermediate stages to prove that it is simply one aspect of the variability of growth and differentiation of tissues. Many other variations in growth may precede this destructive one, and tumors may remain fixed or show progressive changes in structure.

Once the change has occurred, only destruction of all the cancer cells can wipe out the disease. Surgery, radium, roentgen and neutron beams all give us refinements of the old caustics, such as fire and arsenic, but all of them fail, if the tumor is deeply rooted and if the tumor cells are only slightly different from those of normal tissue. Radiation usually is most effective when the cancer cells are quite embryonal in their properties, while the highly differentiated cells, as a rule, can only be destroyed by doses fatal to normal structures. While there is every reason to expect constant refinement in methods of recognizing and treating cancer, it seems probable that this great family of strange tissues will never be reduced to a single disease, recognizable by a test like the Widal or curable by a single therapeutic procedure. For a time you will have to bear with the relatively crude destructive methods of surgeons and radiologists, guided by the relatively temperamental artists called pathologists.

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COSMETIC AND FUNCTIONAL ASPECTS OF BONE GRAFTING IN MANDIBULAR FRACTURES

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If we may judge from the asymmetry, contractures, scars, loss of teeth and malocclusion that usually characterize results of bone grafting in mandibular fractures, the conclusion is that the cosmetic and functional aspects of these operations have been neglected. The prime reason for this neglect is that too many surgeons operating in this field are not familiar with the technical problems involved and as a result the mandibular arch is often allowed to collapse, especially in cases suffering large loss of bone substance. And too frequently there is needless loss of teeth, making restoration approaching the normal difficult or impossible.

The difficulties in the way of securing good impressions for construction of appliances for arch preservation and adequate dental support often tax the most experienced oral surgeon. Contrary to the generally accepted dictum, that osteoperiosteal grafts should be reserved for nonunited fractures in good apposition or those where only a small amount of bone has been destroyed, we have found that this type of graft can be used to advantage in practically every kind of mandibular fracture, where the necessary arch and dental support are provided. Similarly, we have observed that it requires only a relatively small amount of osteoperiosteal tissue to initiate or reestablish osteogenetic function, approximately one-third the amount generally applied. It is the manner of application rather than the amount of this tissue that is important.

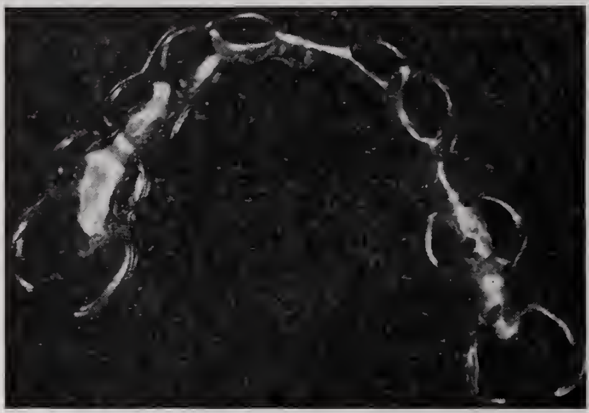
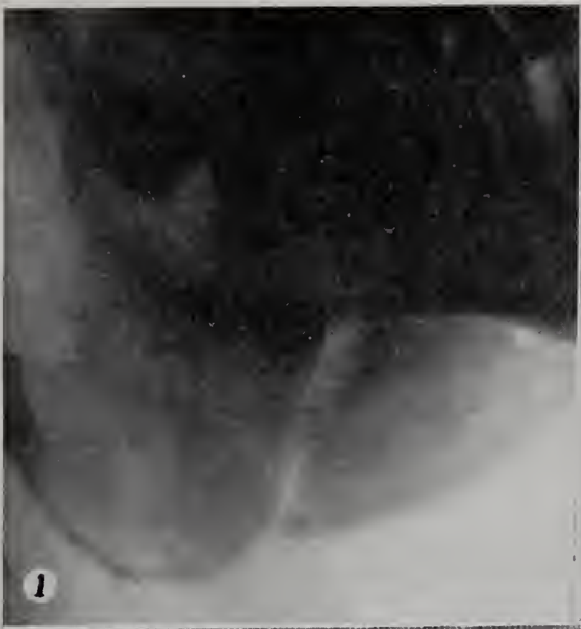
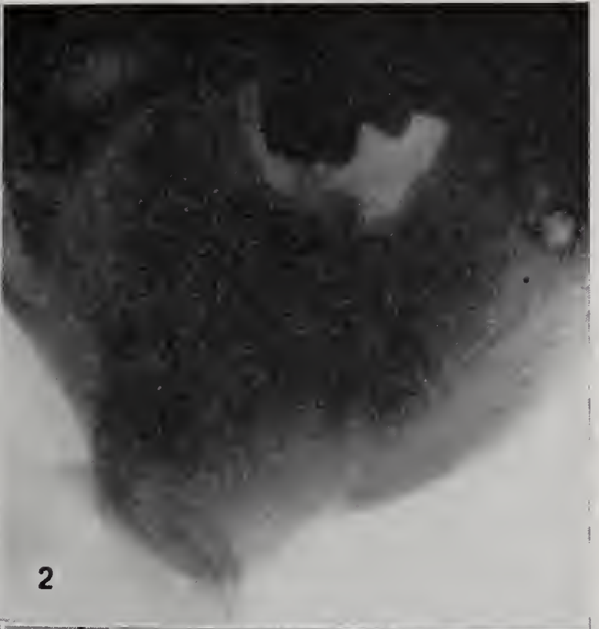
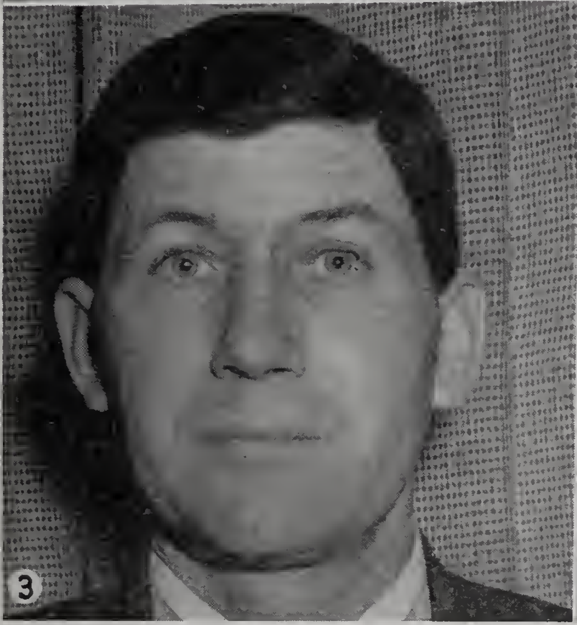


Fig. 9. Shows cast vitallium splint replacing metal band. In addition to maintaining arch contour this splint provides support to the teeth individually.







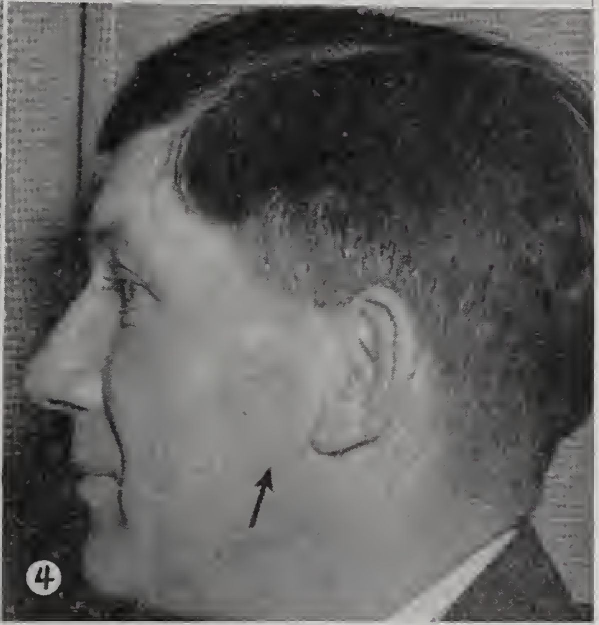


Fig. 1. Shows fracture on left side of mandible in region of third molar. Fracture is in good apposition.

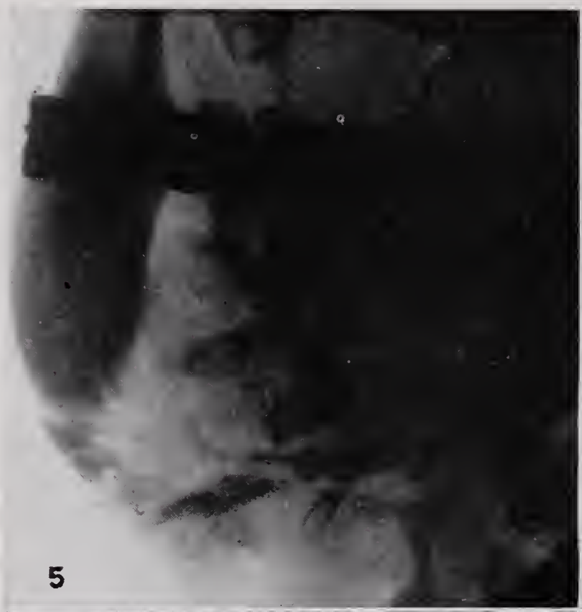
Fig. 2. Shows almost complete union.

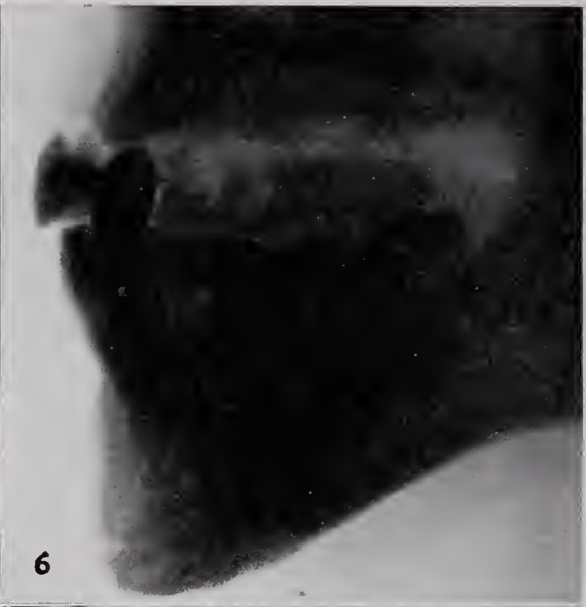
Fig. 3. Shows normal contour of mandible with absence of contractures and scars.

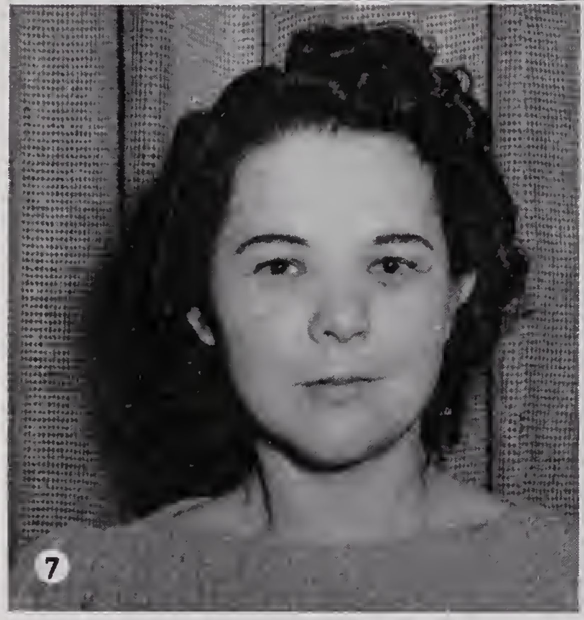
Fig. 4. Shows view of left side of face with absence of scarring at operative site. Arrow points to operative field.

A few points we have found extremely helpful are that we scrupulously avoid surgical exposure at points of fracture whenever possible. The indirect approach, when this method can be used, has many advantages. We invariably refrain from operating along the inferior margin of the mandible. When conditions permit, we believe that partial immobilization after the first two or three weeks is superior to complete immobilization throughout the healing process.

Complete immobilization is only retained until the graft becomes attached to the surrounding soft structures and it is applied only after the splint has been adjusted to meet technical requirements (fig. 9). Otherwise, the principle of partial immobilization could not be utilized in these fractures. When partial immobilization is instituted, the occlusal contacts of the splint are confined to the area immediately over the points of fracture and, as osteogenesis progresses, the occlusion is gradually balanced. These grafts should not be applied within three months following cessation of suppuration. The tibia is usually selected as donor site, although occasionally tissue may be taken from the mandible itself. When removing graft, least possible amount of bone tissue is included as this facilitates its application.







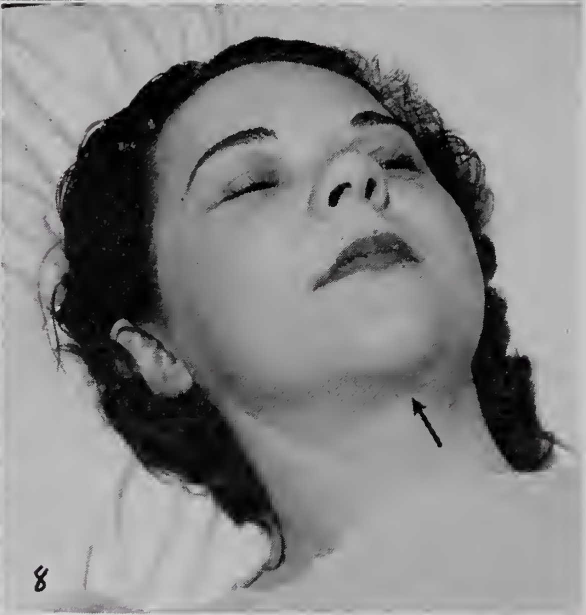


Fig. 5. Shows large area of bone destruction between molar teeth. Note metal band wired to molar teeth by surgeon who treated patient at time of accident to prevent arch collapse.

Fig. 6. Shows complete regeneration.

Fig. 7. Shows anterior view with normal mandibular contour. Note absence of contractures and scarring.

Fig. 8. Shows remaining scar at site of operation immediately under the chin. Arrow points to operative field. It was necessary to place the patient in the supine position with chin well extended to show the remaining scar. The scar on right side of neck along anterior border of sternomastoid muscle is from the incision made by the surgeon who removed the bullet, together with fragments of bone and teeth at this point. Two teeth were lost at time of injury; all remaining teeth were saved by adequate splinting. This scar bears no relation to the bone grafting procedure.

The summation of these points spells surgical refinements, invariably reflected in the functional and cosmetic results. There is no uniformity of operative technic, as every fracture has technical problems peculiar to itself. Only general principles can be laid down and these combined are designed to conserve every tooth possible, maintain a normal mandibular arch and restore the best occlusion circumstances will permit with a minimum of surgical trauma. Two types of cases are presented to illustrate these points.

Case 1. White male, age 45, excellent physical condition. Was injured in an automobile wreck. Different methods of splinting failed to promote union after six months trial.

At the end of this time an osteoperiosteal bone graft was done. A vertical incision 2 cm. long was made along the anterior margin of the left masseter muscle. This incision was so placed as to avoid injury to the facial nerve and to conserve the normal blood supply to the part. It was made at a point so that a pocket carried horizontally forward would not enter the buckel fornix. It is important to avoid penetrating the oral mucosa. Should this happen, the incision should be closed and the graft postponed until communication with the mouth is completely healed. One tooth was lost at the time of the accident (figs. 1-4). This case defies actual detection.

Case 2. White female, age 25, excellent physical condition. Injured by a shot from a 22 caliber revolver (figs. 5-8).

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING, 1942

SIXTY-SEVENTH ANNUAL MEETING

The sixty-seventh annual meeting of Oregon State Medical Society, held in Portland September 2-5, had the largest attendance of any meeting of the society. The total registrations numbered 499 and were made up as follows:

Members were registered from 41 towns in 22 of the 36 counties of the state. Forty-one physicians from ten other states were registered, including Washington, D. C., Ohio, Idaho, California, Massachusetts, Minnesota, Wisconsin, Pennsylvania, New York and Washington. A large number of physicians in active military service attended the meeting.

The registration is given in tabular form below:

Physicians, Oregon	324	
Physicians, Other States	41	
		365
Medical Students		17
Medical School Teachers and Public Health Workers (not physicians)		7
Physicians' Wives, Oregon	76	
Physicians' Wives, Other States	2	
		78
Technical (Commercial) Exhibitors		32
Total		499

The following physicians were elected or installed in office at the business meeting of the society:

OFFICERS

President	W. W. Baum, Salem.
Past-President	Karl H. Martzloff, Portland.
President-Elect	George E. Henton, Portland.
First Vice-President	Thompson Coberth, The Dalles.
Second Vice-President	R. W. Stearns, Klamath Falls.
Third Vice-President	Raymond M. McKeown, Marshfield.
Secretary	John R. Montague, Portland
Trustee of the American Medical Association	Ralph A. Fenton, Portland.
Delegate to the American Medical Association	John H. Fitzgibbon, Portland.
Alternate Delegate to the American Medican Association	Louis P. Gambee, Portland.

COUNCILORS

First District	E. H. McLean, Oregon City (1944).
	Earl M. Anderson, Portland (1943).
	Charles E. Sears, Portland (1943).
Second District	L. M. Spalding, Astoria (1942).
Third District	H. Garnjobst, Corvallis (1944).
Fourth District	E. R. Durno, Medford (1942).
Fifth District	R. W. Hemingway, Bend (1944).
Sixth District	C. W. McCain, Hood River (1942).
Seventh District	C. J. Bartlett, Baker (1943).
Councilor-at-Large	L. S. Kent, Eugene (1942).

WAGE AND HOUR COMMISSION ORDERS

The Wage and Hour Commission of the State of Oregon has recently mailed to employers certain orders concerning personal service occupations. Inasmuch as doctor, dental and laboratory assistants are included in this classification, attention is called to the essentials of the order. Graduate nurses acting as assistants to doctors do not come under this classification, their work being considered professional assistance.

Wages: Thirty-five cents an hour minimum for experienced women or minors. Permission must be obtained to hire inexperienced persons at a wage lower than this minimum.

Hours: Eight hours a day, 44 hours in six days in one week. Rest periods must be allowed. Permission must be obtained for overtime work. Time and a half must be paid for overtime.

Records: Must be kept of daily and weekly hours and wages.

Penalty: As established for misdemeanors. A copy of order must be posted conspicuously.

STATE BOARD OF HEALTH

Lieut. Colonel William Levin, director of the State Hygienic Laboratory, paid the state a short visit while on leave from his duties as Camp Medical Inspector and Chief of the Laboratory Service, Camp Roberts, California.

Health Officer Resigns. N. Paul E. Anderson, who has been acting as Lane County Health Officer while Dr. Gardner has been on military leave, recently resigned. Dr. Anderson will continue his part-time association with the University of Oregon and will engage in private practice.

Milk Ordinance Adopted. The City of Pendleton recently adopted the United States Public Health Service Standard Milk Ordinance.

Indian Service Physician Studies V. D. Control. Dr. Ruth Jens, Indian Service Physician, has been on leave from her duties at the Grande Ronde-Siletz Reservation during the last month, taking a special U. S. Public Health Service course in venereal disease control at Hot Springs, Arkansas.

New Birth Certificate. Certificates of Birth and Still Births have been altered to provide space for recording information regarding prenatal blood tests. These alterations are in accord with the Prenatal Blood Test Law passed at the last session of the State Legislature.

Mental Hygiene Director Attends Graduate Session. Curtis R. Chaffin, Acting Director of the Division of Mental Hygiene, attended the Fourth Postgraduate Institute of the American Psychiatric Association at Western State Hospital, Fort Steilacoom, Washington, early in September.

Psychiatric Social Worker Employed. Mr. John L. Ward has recently come to the Oregon State Board of Health to handle the psychiatric social service duties in the newly organized Division of Mental Hygiene. He is a native of Colorado and graduate of University of Colorado. His experience includes work in the Federal Prison Service and in public welfare. His social work training was received through the University of Denver School of Social Work, and the Colorado Psychopathic Hospital at Denver.

New Junior Sanitary Engineer. Mr. Archie H. Rice, recent graduate of Oregon State College, was appointed to the position of Junior Sanitary Engineer in the Division of Sanitary Engineering during the month of August. More recently, Mr. Rice has been employed by Hunt and Chambers, Blackie and Wood, Architect Engineers, Medford Cantonment, and assisted in the design of the sewage treatment plant for the Triangular Division camp to be located in that area.

Child Health Division Adds Audiometrist. Miss Rebecca Overstreet, teacher and clinical psychologist, has been employed as audiometrist to assist in hearing surveys for the present school year. She will administer the group audiometer tests and prepare the follow-up papers of the deficient cases. Dr. Gardner will later test these pupils with the pitch audiometer and interview the parents with the nurse.

STATE BOARD OF MEDICAL EXAMINERS

The Oregon State Board of Medical Examiners will meet on October 16-18, at the board offices, 608 Failing Building, Portland. Two revocation hearings are scheduled and the Board will also consider applications for reciprocity as well as regular business of the Board.

SOCIETY MEETINGS

JACKSON COUNTY MEDICAL SOCIETY

The first regular dinner meeting of Jackson County Medical Society was held September 10 at Medford. C. A. Haines of Ashland presented a paper on "The Complications of Midwifery." A. E. Merkel, Jackson County Health Officer, was host for the meeting.

LANE COUNTY MEDICAL SOCIETY

The regular dinner meeting of Lane County Medical Society was held September 19 at the Osburn Hotel, Eugene. Roger H. Keane and Norman A. Daniel of Portland lead a general discussion on "Cilnical Aspects of Chemotherapy."

MARION-POLK MEDICAL SOCIETY

Marion-Polk Medical Society held the first dinner meeting of the year, September 9, at Salem. Harry C. Blair of Portland discussed "Use of Vitallium in Treatment of Acute Fractures." Frank Dietrich of Portland discussed "Edema and Its Treatment."

UMATILLA COUNTY MEDICAL SOCIETY

A dinner meeting of Umatilla County Medical Society was held September 22 in Pendleton. W. W. Baum of Salem, President of Oregon State Medical Society, discussed "Policies and Activities of the Oregon State Medical Society." Henry Garnjobst of Corvallis discussed "Prepayment Medical Service Plans Proposed by the Farm Security Administration," and J. P. Brennan, local delegate to the state meeting, gave his report to the County Society.

UNION AND WALLOWA COUNTY MEDICAL SOCIETIES

Union and Wallowa County Medical Societies held a meeting September 23 at La Grande. W. W. Baum of Salem spoke on "Policies and Activities of Oregon State Medical Society" and Henry Garnjobst of Corvallis spoke on "Prepayment Medical Service Plans Proposed by the Farm Security Administration."

MEDICAL NOTES

Providence Hospital, Portland, recently erected by the Sisters of Charity of Providence, who also operate St. Vincent's Hospital, was formally dedicated September 8 and is now receiving patients. Already an additional contract has been awarded for the erection of a $230,000 nursery for the hospital.

Donald Wair, formerly acting head of Eastern Oregon State Hospital at Pendleton, has been named permanent superintendent of the institution.

Wesley H. Haffner, Portland, has been appointed medical director of Lane County Public Welfare Commission.

Charles H. Barr has been appointed Canby city health officer.

Louis J. Wolf, Portland, has been named acting city health officer of Portland, replacing Adolph Weinzirl who resigned to become Professor of Public Health and Preventive Medicine at University of Oregon Medical School.

OBITUARIES

Dr. Richard Frank McKaig of Yoncalla died in Eugene August 2, at the age of 75. The cause of death was cerebral hemorrhage and senility.

Dr. Charles C. C. Rosenberg of Astoria died August 7 at the age of 82 years. Death resulted from pyloric obstruction, probably carcinomatous.

Dr. F. R. Wilson of Halfway died suddenly at his home August 31, at the age of 65. The cause of death was coronary occlusion and angina pectoris.

SPEECH DEFECTS OF CHILDREN

The causes for sound substitutions or omissions in words in the speech of young children may be both functional and organic, Ruth E. Beckey, Ph. D., Columbus, Ohio, says in a recent issue of *Hygeia, The Health Magazine*. Fortunately, she adds, many of the substitutions are due to faulty training, too much isolation, overstimulation, defective models for imitation and too much criticism by the parents. However, many of the organic defects of the speech apparatus may be repaired if the child is taken to the surgeon or orthodontist (dentist who specializes in prevention and correction of irregularities of the teeth) early enough. The teeth may need to be straightened before the child can say some of the sounds. If the front teeth have not yet appeared, and the "s" is defective, the best plan is to wait for the teeth to appear. The "s" may take care of itself. If hearing is suspected to be defective, an audiometer (device to test the power of hearing) check should be made to determine whether the child is hearing all of the different speech sounds accurately. The parents should also try to remove any unfavorable factors in the child's environment which may be impeding his progress, Dr. Beckey warns.

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING, SPOKANE, 1942

WASHINGTON STATE MEDICAL ASSOCIATION

PROCEEDINGS OF THE FIFTY-SECOND ANNUAL MEETING OF WASHINGTON STATE MEDICAL ASSOCIATION, SEATTLE, AUGUST 24-27, 1941

BOARD OF TRUSTEES

FIRST SESSION

The Board of Trustees met at the Olympic Hotel, Sunday, August 24 at 6:30 p.m.

The written annual reports of all committees were submitted, including the report on finances of the Association made by the Secretary-Treasurer. All reports were referred to the House of Delegates. All such reports appear in the minutes of the House of Delegates sessions held August 26 and 27.

Officers and Board members present were:

H. D. Dudley, G. W. Cornett, L. A. Greenwood, W. P. Penney, V. W. Spickard, A. J. Bowles, J. H. O'Shea, R. L. Zech, J. E. Bittner, A. E. Gerbardt, D. G. Corbett, M. S. Jared, J. F. Christensen, F. H. Douglass and W. D. Read. Others attending were D. G. Evans, H. E. Rhodebamel, J. R. Morrison, H. L. Hartley, C. A. Smith and Mr. William T. Laube, legal counsel.

Minutes of the meeting held March 16, 1941, were approved. Report of the Secretary-Treasurer was approved. The Board also approved the following actions: Dissolution of the Advisory Committee to the State Departments of Health and Social Security; report of Constitution and By-laws and minutes of the Pacific States Medical Executives Conference be referred to Executive Committee for study; acknowledged communications and report of the appointments by Governor Langlie of physicians recommended by Board for State Medical-Dental Board and vacancy on State Medical Board; authorized Public Relations Committee in medicolegal matters; approved findings of attorney on legal status of NORTHWEST MEDICINE and referred attorney's report to House of Delegates; approved report of Committee on Medical Defense; referred increase of Central Office space to Executive Committee; accepted resignation of M. Shelby Jared as Chairman on Committee of Medical Defense and referred resignation to House of Delegates.

The Board further discussed the basic science law and examinations and referred the matter to the Public Relations Committee; approved the agenda for House of Delegates and report to the Board of A. M. A. delegates.

SECOND SESSION

The Board of Trustees met on Wednesday, August 27, at 4:55 p.m., to select nominations to the House of Delegates. It nominated for the Committee on Publication, one year terms, the following: S. F. Herrmann, Tacoma; H. E. Coe, Seattle, and R. N. Hamblen, Spokane. The Board nominated Homer D. Dudley as Chairman of the Committee on Medical Defense for First Congressional District and for the unexpired two year term. It also selected Homer D. Dudley as a member of the Executive Committee to the vacancy created by the death of Caspar W. Sharples.

HOUSE OF DELEGATES

FIRST SESSION

August 26

The meeting of the House of Delegates was called to order at 8:00 a.m. by the Speaker, Wilmot D. Read, Olympic Hotel, Seattle. On calling the roll, a quorum was found to be present. Minutes of the 1940 meeting of the House of Delegates held in Tacoma were approved and adopted as published in the October, 1940, issue of NORTHWEST MEDICINE.

Appointment of Committees

The following Committees were appointed by the Speaker of the House of Delegates: Resolutions—John H. O'Shea, Chairman, W. B. Penney and Edwin A. Nixon; Credentials—Lyle A. Greenwood, Chairman, A. P. Duryee and Herbert C. Lynch; Necrology—Herbert E. Coe, Chairman, A. O. Adams and J. F. Christensen; Committee to Choose Place for 1942 Convention—Frank H. Douglass, Chairman, C. R. McCreery and Don G. Corbett.

The Committee on Credentials met at 7:30 a.m. and reported to the Speaker that credentials of all delegates reporting were in order. Hearings were held by the Resolutions Committee and the Committee on Choice of 1942 Convention in Room 554, Olympic Hotel, headquarters of the state association, August 26, p.m.

Wilmot Read, Speaker, spoke in memory of Caspar W. Sharples who died July 15, 1941, mentioned his long and faithful service to medicine and in the activities of the state association. The House paid its respects to Dr. Sharples in standing silence.

W. W. Baum of Salem, Oregon, President-Elect of Oregon State Medical Society, a visitor to the convention, was presented to the members of the House by the Speaker.

The Speaker then called the House into executive session with the members hearing a confidential report on medical preparedness by John H. O'Shea, the prosecution of the A. M. A. by R. L. Zech and medicolegal matters by the attorney of the association, William T. Laube.

REPORTS OF COMMITTEES

The annual report of the Board of Trustees, reports of committees, resolutions and other items were referred to the Resolutions Committee with instructions to report back to the House of Delegates on Wednesday, August 27. The committee reports follow:

Report of President

AND BOARD OF TRUSTEES

It has been my privilege and pleasure for the last year to have served as President of this Association. During this period I have gained an increased knowledge of the affairs of the profession throughout the state, come to know some of the problems of the component county medical societies and duties of the many committees of the Association.

With your permission I shall make this an official report to you, as Chairman of the Board of Trustees, and also my message as retiring President of the Association with comments based upon observation and knowledge gained during this period.

BOARD OF TRUSTEES

The Board has met four times during the last year and disposed of numerous problems concerning the Association and its twenty-four component societies. It has attempted at all times to coordinate and advise in a judicial manner on matters relating to the problems and welfare of the profession, individually and for county and state organizations as a whole. It has reviewed and acted upon reports submitted to it by the Executive Committee.

As administrative body of the Association it has throughout the year conducted its affairs conforming to the provisions of the Constitution and By-Laws and dictates of the House of Delegates.

OLD AGE ASSISTANCE GRANT

Early last fall it was confronted with a major problem when Initiative 141 known as the Old Age Assistance Grant was passed by a vote of 358,009, a majority of more than 100,000, and thereby became a law.

Section 15 of this Act provides free choice of medical, dental, hospital and nursing service together with other benefits to its recipients. By this Act the voters of this state provided so-called "State Medicine" for a class, i.e., those who qualify over 65 years of age, estimated at that time to include from 54,000 to 60,000 citizens. It needs no stretch of imagination to see whereby an amendment or simple modification of this law could provide "State Medicine" for all. It should be remembered that the medical profession had no part in the creation of this law except to exercise the personal right to vote for or against it.

I venture the assertion that not one per cent of the profession read the bill before casting a vote or knew the provisions of Section 15 and its effect upon the practice of medicine. It has been found difficult to apply all the provisions of this Act by literal interpretation because some infringe upon legal rights. Free choice of hospitals and doctors required defining.

The decision of the Attorney General has to date recognized the right of privately financed and standardized hospitals to reject this provision of the law. This with innumerable other provisions will be ultimately determined, no doubt, by court decisions.

By the first of August, 1941, there have been filed over 600 law suits, in most instances attacking some ruling of the Department of Social Security or procedure in its administration of Section 15 of Initiative 141. It is obvious the extent to which the medical profession is interested.

It was imperative that organized medicine associate itself intimately with this project, that its interests, standards of medical service and public health might be conserved. The Board was confronted with two alternatives: (1) to recommend that the State Medical Association refuse to participate; (2) to cooperate, with the privilege of having a voice in policy, administration and distribution of funds.

Refusal to participate would in all possibility have brought condemnation upon the entire medical profession and favored future legislation directed against it.

Public opinion, adequate medical care for the aged, safeguarding of standardized hospitals, possible establishment of politically supervised public clinics, rulings of officials and their interpretation of the law, administration of the Act, in fact, the very position that organized medicine itself should take, all this and more was given serious consideration.

MEDICAL SERVICE BUREAUS

It was fortunate for all concerned that through the existing medical service bureaus there was available an organization that with experience and physical equipment was competent to administer the vast services required. This cooperation is a credit to the profession of organized medicine and provided inestimable financial savings to the tax payers. I believe by this action the profession has gained in public opinion and will acquire invaluable experience useful in opposing future legislation adverse to public health and the interests of scientific medicine.

Recognition is due the managers of the state bureaus for their valuable assistance and advice in formulating rules and regulations and their Board of Trustees for its hearty cooperation.

Plans were approved by the Department of Social Security, whereby doctors and dentists were nominated to act both on the State and County Medico-Dental Advisory Boards. There is some consolation in the fact that $2,660,000 is available for medical care during the biennium in administering Section 15 of the Old Age Assistance Grant.

Because of the intimate relationship of the bureaus to the profession of the state as a whole, the operating experience of some of the county bureaus, variations as to policy, administration, etc., I believe some provision should be made to bring the bureaus under more direct supervision of the State Association with its power to supervise and determine policies. I recommend this to the House of Delegates for its consideration.

STANDING PUBLIC RELATIONS COMMITTEES

It is increasingly apparent that changing forms of social activity throughout the world have come to involve our nation and state and bring the medical profession annually nearer government regimentation affecting private practice, looking toward so-called socialized medicine.

It depends entirely upon one's individual viewpoint or knowledge of social and economic problems affecting all citizens of the state to what extent such speculative changes shall be considered beneficial or undesirable. I am convinced the trend of the times, exemplified by national and state legislation, points definitely to further changes in conduct of all forms of business and professional activity and to that extent the medical profession will be involved.

It is my conviction that with changing social conditions the medical profession shall be required to adjust itself to these demands and must strengthen its position by concerted action through its state organization. This calls for individual effort, increase of membership in the Association and the extent to which the medical profession openly participates in politics.

We must learn to think in terms of laws and how such may affect us professionally and economically and their influence upon public health and scientific medicine. Much was accomplished during the past year and the report of the Committee on Public Relations proves the desirability of being actively alert. That its influence may be strengthened and broadened, I recommend that standing public relations or legislative committees be created in each county medical society.

PHYSICIANS COMMITTEE

There has been developed a nonpolitical, nonprofit organization, known as the National Physicians Committee for the Extension of Medical Service, whose chief objective is to familiarize the public with facts in connection with the values of the methods and achievements of American medicine and to secure a most widespread distribution of the most effective methods and equipment in medicine and surgery.

At the June meeting of the A. M. A., Dr. Morris Fishbein said:

"I have personally and without regard to any position which I may hold in the headquarters office of the American Medical Association, felt that in the National Physicians' Committee the American medical profession possesses an organization potential to accomplish more for education of the American people regarding the fundamental standards inherent in the establishment of a high quality of medical service for the people of the United States, than it would possess in any other organization."

This organization is supported by voluntary subscriptions and I believe all of us should make some contribution in support of the cause for which we stand but as individuals or as a State Association we are helpless to accomplish.

EXECUTIVE SECRETARY

I would like to emphasize the importance of the central office of the Association, commend the work of the Executive Committee and pay credit to Mr. Arthur Anderson in capably fulfilling the requests of the Committee and his cheerful cooperation by counsel and assistance to the twenty-one committees, serving on which are nearly one hundred physicians from all parts of the state.

Mr. Anderson acts as secretary to all the committees, prepares their minutes, also those of the House of Delegates and Board of Trustees and furnishes material for NORTHWEST MEDICINE. This office serves as business headquarters of the Association, a clearing house through which all twenty-four component societies function as a unit throughout the year. It is a medium for carrying out the orders of the House of Delegates, dictates of the Board of Trustees and through the Executive Committee acts upon emergencies as they arise. It has established friendly relations with state and local health agencies and many state departments and bureaus.

It was through this office and the efforts of Mr. Anderson that the program outlined by the Public Relations Committee successfully protected the interests of public health and the profession at the last state legislature. It handled about 5,000 pieces of incoming mail during the last year, packed with inquiries and problems to be answered or solved. It is responsible for all the innumerable details for this convention so essential for a successful meeting.

MEDICAL DEFENSE FUND

All the affairs of the Medical Defense Fund are handled in this office which of itself is an active department protecting the interests of its members. Here accurate cross files and statistical data are kept, monies handled, and correspondence attended to. This department covers many court trials, confers with the attorney for the Association and with its years of accumulated experience becomes an ever increasing protection to physicians who are threatened or sued.

I believe and urge that more members should in self-protection voluntarily join the Medical Defense Fund. The benefits may be classed as (1) material and (2) intangible.

Material.

1. The development of a fund to share the expense of malpractice defense of members and set up a reserve for an emergency, if all companies should again discontinue issuing this type of policy.
2. Aid to each contributing member when suit is instituted, by advice and cooperation in resisting unjust charges of malpractice.
3. Aid to attorneys in preparing legal defense and recommending settlement, when with investigation the case warrants it.
4. Cooperation with interested insurance carriers according to the rules and regulations of the Medical Defense program to reduce the costs of litigation and keep premium rates low as is consistent with good business and adequate protection.
5. Provides a premium saving of $10 per year, if insured by a company whose cooperation covers twenty-seven years experience with the Medical Association. This is not so, if insured with companies that do not require membership in the Defense Fund. It may be emphasized here that by lack of this requirement such companies are profiting by all the accomplishments of the Defense Fund over a long period of years, and contribute toward defeating many other desirable features of medical defense.
6. Development of statistics vital to the interests of all and helpful in meeting charges of malpractice and in preparation of defense.
7. Educational in advising members of the necessity of malpractice insurance and pointing out as occasion permits, in what way individual physicians thoughtlessly contribute to the development of malpractice litigation.
8. Provides legal counsel on retaining fee, aside from attorney representing insurance company, to advise Defense Committee; and in many ways furnishes special investigation and other valuable services.
9. Provides money to meet current office expenses and furnishes a representative at annual meetings with executives of other states.

Intangible.

1. While malpractice litigation is still high in Washington, it is believed and in instances known that the favorable experience of the Defense Fund over a period of twenty-six years has deterred many from instituting malpracitice proceedings.
2. The value of cooperation in a mutual cause is incalculable socially, economically and financially. Nothing can be accomplished individually. Whatever good may have been accomplished by support of members and efforts of officers of the Committee on Medical Defense, it has thereby benefited every physician in the State of Washington. For this reason it is believed by many that every member should be willing and anxious to make his contribution to the good of a cause that protects his professional and financial interests in a way he cannot provide for himself as an individual.

With a little thought on the part of all, I doubt if anyone really wants others to pay the price to continue a cause, the benefits of which accrue equally to all, but toward which one makes no individual contribution.

The central office should continue to grow in its importance to the profession and should be used and supported by all.

CASPAR W. SHARPLES

It is fitting that I mention the passing of Caspar W. Sharples, a past-president of the Association, who acted as Chairman of the Finance and Executive Committees to within a short time of his death. His years of experience as an active practicing physician, a member of many committees of the Association, his service in civic activities and contacts with business organizations, together with an uncanny ability to see quickly to the point of any issue and make a determined decision, were of inestimable value to the committee and the interests of the State Medical Association. The last time I saw him he said, "I'm sorry I can't attend the next Executive Committee meeting, there is much to be done and I'd like to carry on." We grieve his passing and miss his counsel.

GRADUATE MEDICAL EDUCATION

Graduate medical education is necessary for professional progress and a comprehensive program should be sponsored by the State Association without regard for any other special society meetings or refresher courses. The Committee on Graduate Medical Education and Hospitals has prepared such program, but because of national preparedness demands it was believed inadvisable to inaugurate it during this year.

LEGAL COUNSELOR

Last year legal counsel was employed to advise the Board of Trustees, Executive Committee and Committee on Medical Defense in its decisions wherein the interests of the Association needed legal protection. Mr. William T. Laube has given freely of his time and talent far beyond any financial remuneration. He has met regularly with the Board of Trustees, the Executive Committee and on several occasions with special committees. He has interested himself in many ways in behalf of the Association and his advice has been most helpful. He has by his own initiative brought to the attention of the Executive Committee matters of vital importance to the Association. Matters concerning the Basic Science Law, Department of Licenses, Medical Defense and Initiative 141 have received his attention. You will be interested in his report. One may well wonder how the Association has gotten along in the past without Mr. Laube and Mr. Anderson.

BASIC SCIENCE LAW

There is apparently a concerted effort on the part of some to attack the Basic Science Law both by legislative action and through the courts. Benefits to the public, interests of public health and scientific medicine demand that as a profession we give no support to any movement that will in any way weaken its present provisions.

There are instances, however, wherein it seems to some a strict interpretation of the law or the method of its administration works a personal hardship upon members of our profession who by credited training are fully qualified to render an efficient service to society yet are put to unwarranted expense, annoyance and time loss by failure to meet requirements satisfactory to the Board. I would caution against hasty action and urge that all the facts be known before decisions or recommendations be made.

REVISED COUNTY CHARTERS

Revised county charters as approved by the House of Delegates last year have been issued to all component societies, together with a proposed Constitution and By-Laws fashioned after the Constitution and By-Laws of the State Association.

Of the total number of physicians recently known to be registered in the state there were 586 who were not members of any county medical society. Believing the profession should be fully organized to exert a united front when necessity demands, it seems many who are eligible for membership should be invited to join. This matter is, of course, wholly within the jurisdiction of such county society, remembering it is easy to make one a member but only by prescribed measures may one be expelled.

COUNSEL COMMITTEES

It has happened on several occasions that younger men have expressed the need of counsel in a variety of matters after becoming members of a county medical society but had no recognized source to which to turn. I recommend each county society consider providing a "counsel committee" to greet and advise new and younger men. This would be a splendid way of enlisting united support in behalf of organized medicine and a fine gesture of professional friendship.

During my term of office it has been my genuine pleasure to visit 12 county medical societies, representing 22 of the 39 counties in the state, to have renewed old friendships and I hope to have made new ones. I was courteously received and entertained. I regret conditions prevented my visiting all societies.

DEPARTMENT OF LABOR AND INDUSTRIES

I am officially informed that the Department of Labor and Industries will be revised, looking toward increasing its efficiency in behalf of the recipients of the Act and the physicians who participate. You may be interested to know the present Director of the Department of Labor and Industries welcomes the advice of the Industrial Insurance and Health Committee to the Department and by this cooperation we may be assured the interests of the profession are safeguarded.

With increasing requirements for adequate space to accommodate attendance, commercial and scientific exhibits and social activities at annual meetings, it seems desirable that future meetings of this Assoiation should be held only in those cities able to meet these requirements. If such a plan were adopted it should include a registration fee sufficient to cover at least a portion of current expenses. I recommend favorable action by the House of Delegates of this proposal.

One cannot review the work of the Association without recognizing the incalculable service rendered by the various committees. It is by coordinating their efforts the State Association really functions. It is my extreme pleasure to hereby recognize their efforts and on behalf of the members of the Association express their appreciation and my genuine personal thanks and indebtedness for their work and assistance in meeting the requirements arising during my administration.

I have been honored by election to this office, for which I am deeply appreciative.

I wish to thank you all sincerely and express my deepest gratitude for accepting me with my obvious frailties, personal characteristics and misdemeanors, undoubtedly objectionable at times to some. For all these shortcomings I can only solicit your tolerance and forgiveness.

I shall be happy, if it can be said I did not shirk my task and to the full extent of my limited ability tried to serve all the interests of this Association without affectation or personal design.

It has been a great pleasure to have served and to have been associated with a fine, capable, unselfish group of men, your Board of Trustees.

Homer D. Dudley, *President.*

Report of Secretary-Treasurer

The report and audit of the Secretary-Treasurer is for one and a half years, January, 1940 to June 30, 1941, showing the total receipts and disbursements during the period.

GENERAL FUND JANUARY 1, 1940 TO DECEMBER 31, 1940

Total receipts	$18,744.28
Disbursements	17,177.28
Excess	1,567.00

MEDICAL DEFENSE FUND JANUARY 1, 1940 TO DECEMBER 31, 1940

Total receipts	$ 8,482.81
Disbursements	4,322.42
Excess	4,160.39

GENERAL FUND JANUARY 1, 1941 TO JUNE 30, 1941

Total receipts	$20,090.25
Disbursements	10,705.77
Excess	9,384.48
Checking	$16,799.69
Savings	5,407.91
Total	22,207.60

MEDICAL DEFENSE FUND JANUARY 1, 1941 TO JUNE 30, 1941

Total receipts	$ 4,776.71
Disbursements	2,842.99
Excess	1,933.72
Checking	$13,561.76
Savings	15,699.91
Total	29,261.67*

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* Does not include the value of securities owned, purchased for $23,390.

MEMBERSHIP AS OF JUNE 30, 1941

Active	1,359
Honorary	64
Transfers	10
In Military Service	76
Total	1,509

Members in Medical Defense Fund: 788, an increase of 15 over June 30, 1940.

V. W. Spickard,
Secretary-Treasurer

Advisory Committee to the State Departments of Public Health and Social Security

This Committee was first appointed in the spring of 1940 by Warren B. Penney, who was then President of the State Medical Association, the Committee being appointed for the sole purpose of trying to obtain more adequate medical and hospital care for the indigent and relief classes of individuals. However, this Committee had just started well on the problem, when in the summer and fall of 1940 Initiative 141 loomed on the horizon, and since Section 15 proposed to give medical, surgical, hospital and so forth care to the old age recipients under this measure, and with the passage of this Initiative by the voters of the state, it became immediately imperative for this Committee to devote all of its energy in helping the State Social Security Department to form a plan, whereby the medical, surgical, hospital care, and other features pertaining to this Act could be administered.

Subcommittees were, therefore, appointed to furnish the Committee with reports upon the likely number of recipients, hospitalization, nursing, surgical, dental, appliances and other costs. These subcommittees then reported back, and from these reports a plan was finally evolved. This plan was submitted to the Board of Trustees of Washington State Medical Association. This Committee acted only in an Advisory capacity to the State Department of Social Security in the formation of this plan.

This plan, in brief, was to have the medical and dental business of handling these old age recipient patients handled through the various Medical Service Bureaus of the State, and remuneration to the Bureaus was to be derived from a certain percentage of the total money appropriated for the medical care of these recipients.

The formation of future policies, and other matters pertaining to the administration of this Act, was to be delegated to a Medical-Dental Board, and this Board was to act in an advisory capacity to the State Department of Social Security. The plan, with minor alterations, was adopted by the Board of Trustees, and following that by the State Board of Medical Bureaus, and finally also approved by managers and medical directors of the various County Medical Bureaus.

Following this, on March 16, 1941, the State Board of Trustees recommended to Governor Langlie the following men: M. Shelby Jared, H. E. Rhodehamel, Warren B. Penney, and John F. LeCocq, to serve on the Medical-Dental Board. These men were duly appointed and act only in an advisory capacity to the State Department of Social Security.

This Medical-Dental Board is functioning, and it seems logical that it should now carry on the functions of this Committee. It is recommended that this Advisory Committee now be discontinued.

The members of this Committee express their gratitude for the valuable help given by many of the members of the medical, dental, nursing, hospital, and pharmaceutical professions, and the many Medical Bureau directors and managers. Physicians meeting with the Committee were Homer D. Dudley, H. C. Ostrom, C. W. Sharples, M. Shelby Jared, R. H. Fletcher, J. W. Haviland and Purman Dorman.

John F. LeCocq, *Chairman*

Executive Committee

Following the Fifty-First Annual Meeting of the Washington State Medical Association held in Tacoma, August, 1940, the Executive Committee held thirteen meetings up to July 17, 1941, and has scheduled two more meetings before the 1941 annual meeting. The meetings were held in 1940 on September 23, October 7, November 4, November 18, December 13 and in 1941 on January 6, February 1, March 7, March 21, April 8, April 28, May 23, July 8, and scheduled meetings for July 28 and August 11.

The Executive Committee reported its actions to each quarterly meeting of the Board of Trustees and carried out the orders of the Board following its meetings. Other than reviewing and acting upon several thousand inquiries and communications addressed to the Central Office of the Association, the Committee acted upon the following major items:

1. Reviewed and approved all bills.
2. Reviewed and approved audit of accounts and management of funds.
3. Forwarded copies of proposed Constitution and By-Laws to all component societies.
4. Issued, by order of the Board of Trustees, new charters to all component societies.
5. Reviewed with Public Relations Committee and representative of Association stationed at Olympia during Legislature, all bills introduced affecting medicine and public health.
6. Reviewed and met with Advisory Committee to State Departments of Public Health and Social Security survey of Initiative 141, Section 15.
7. Directed, in cooperation with Chairman of Committee on Medical Preparedness, military survey of all physicians for A.M.A. in state.
8. Ordered publication and distribution of Speakers' Bureau listings for all component societies.
9. Held meetings with State Association Committees, state bureaus and departments and state officials.

C. W. Sharples, *Chairman*

Finance Committee

The Committee presents a statement showing the original amounts appropriated by the Board of Trustees, and the balances as of June 30, 1941, remaining unexpended. The unexpended balances are for the remaining six months of 1941.

	Amount	*Balance*
Executive Secretary Committee	$13,000.00	$5,639.49
President's Office	300.00	205.20
Meetings:		
Annual	1,000.00	1,000.00
Trustees'	650.00	336.52
A.M.A. Delegates	350.00	....
Special	200.00	177.50
Northwest Medicine	2,800.00	322.00
Exhibit Expense	1,000.00	1,000.00
Fidelity Bonds	15.00	5.00
Miscellaneous	200.00	200.00
Retainer Fee	300.00	150.00
	$19,814.00	$9,035.71

The following is the condition of the finances of the Washington State Medical Association, as of June 30, 1941:

Cash, General Fund	
Checking Account	$16,799.69
Savings Account	5,407.91
	22,207.60
Appropriated Funds, not spent	9,035.71
Unencumbered Balance	$13,171.89

V. W. Spickard, *Acting Chairman*

Approved by Executive Committee.

Graduate Medical Education and Hospitals

The Committee wishes to thank the various agencies engaged in postgraduate medical education in the State of Washington for their cooperation during the last year. The Committee is interested in coordinating these activities to provide a systematic plan of postgraduate education and to prevent a conflict in various programs. Although there has been a good deal of activity which has not been reported to or coordinated through the central office, several of the agencies have been particularly cooperative in complying with requests of the Committee in this respect. They are the State Department of Health, and Committees on Tuberculosis, Maternal and Child Welfare, Neoplastic, and University Extension Course.

Approximately two hundred and fifty men registered for the meeting of the Pacific Northwest Medical Association in Spokane and two hundred and fifty for the University Extension Course in Seattle.

The Committee wishes to thank the one hundred and seventy-nine physicians who have registered under the Speakers' Bureau to give talks to the component societies throughout the state. Since this Bureau was established in August, 1940, only six requests have been made through the Bureau for speakers. It is hoped that the number will be increased, when the activities of the Bureau are more thoroughly understood.

It has been felt unwise to initiate the proposed circuit course of lectures because of the activities of the medical profession in national defense at the present time. This plan will be carried out as soon as it is felt that conditions warrant.

The Committee regrets that efforts to coordinate graduate teaching have been somewhat hampered by the national emergency but these efforts should be continued. When the entire program has been carried out there is no reason why the postgraduate medical education in this state should not compare favorably with that in other communities.

A. B. Hepler, *Chairman*

Industrial Insurance and Health

We have had several meetings in the past year and have had the most friendly relations with the Department of Labor and Industries.

The only grievance that came before the Committee was that of the Idaho physicians handling industrial work in the eastern part of the state and we were able to satisfactorily adjust all matters between the physicians who did complain and the department. To date we have heard nothing further from them.

In April, 1941, the Committee met and reviewed the qualifications of the physicians and surgeons in the state who wished to comply with the request of the American Medical Association, and who had filled out the questionnaire regarding Medical Preparedness in the Industrial Field. The American Medical Association requested us to act upon the qualifications of the physicians and surgeons in the state doing industrial surgery, and we complied with their request to the best of our ability.

In May, Mr. Robert H. Harlin was appointed Director of the Department of Labor and Industries and we made a "goodwill" trip to Olympia and volunteered to render any service that we could to him. As an outcome of that meeting, we were invited on July 8 to Olympia to meet with him and his various officers. They are developing a plan whereby physicians would be appointed to various districts in the state which they anticipate carrying out. In regard to this new plan, it was suggested in the course of the meeting that they formulate their plans and our Committee would meet with them at a later date, on or about July 28.

H. T. Buckner, *Chairman*

Maternal and Child Welfare

A new departure was used during 1941 for meetings of this Committee. The Chairman, with R. S. Mitchell of Wenatchee, met with the Spokane members early in January and the Seattle men convened in February. In this way an excellent representation was realized with a minimum expenditure of money and time by the members.

The deliberations of the Spokane contingent were abstracted and presented to the Seattle members. President Homer D. Dudley and Executive Secretary Arthur Anderson were also in attendance.

The following points were discussed with subsequent action:

1. The importance of Maternal and Child Welfare could well be disseminated throughout the state with the aid of the Medical Auxiliary. Later when the Executive Council of the Auxiliary was in session, a plan was presented to them, with the request that a staggered committee of five be appointed, one member to serve five years, another four, etc., and that each incoming president should appoint a member to serve five years, this Committee to cooperate with the State Maternal and Child Welfare Committee. The Auxiliary favorably considered the suggestions and graciously appointed five excellent members to take up this service.

2. The Secretary of Washington State Medical Association was asked to request each county society to appoint a Maternal and Child Welfare Committee to collaborate with the State Committee. This plan will be inaugurated this fall.

2. To inaugurate a Forum in Northwest Medicine in which practical obstetric problems would be presented one month and pediatric ones alternate months. The respective obstetricians and pediatricians of Idaho and Oregon as well as Washington were invited to make comments on these problems. This has been carried on since April with the sustaining help of Editors Clarence Smith and Herbert Hartley.

4. The arrangement of Maternal and Child Welfare Panel Discussions at the State Meeting in August. Programs have been completed through the generous acceptance of busy men who are presenting an obstetric panel one hour and a pediatric panel the next.

The objective of these efforts is to stimulate a healthy continuing interest in increasingly better obstetrics and pediatrics in this state. It is hoped that the scope of attention and knowledge may be broadened through the media of the Medical Auxiliary and the County Maternal and Child Welfare Committees, the latter when established in County Medical Societies.

H. H. Skinner, *Chairman*

Medical Defense

Out of a total of 1,512 members as of June 30, 1941, which includes 1,363 active, 76 in the military and naval services, 65 honorary and 5 transfers, 785 are members of the Defense Fund.

The records show that eleven malpractice suits were filed before the courts against the members from September 1, 1940, to June 30, 1941, with the following results:

Four were found for the defendant.

Seven were dismissed.

Seven cases were settled out of court.

Two cases were stricken from the calendar.

Three cases were outlawed by time limitation.

The records also show the following cases still carried in the active file:

Thirteen members have been served with papers from September 1, 1940, to June 30, 1941.

Five members were served with papers prior to September 1, 1940, making a total of nineteen cases pending.

Eight threats of suits were reported from September 1, 1940, to June 30, 1941.

Five threats of suits were reported prior to September 1, 1940, making a total of thirteen threats on file.

M. Shelby Jared, *Chairman*

Medical Economics

In a recent issue of Northwest Medicine, the editorial, "Is It Prelude to State Medicine?", concludes with this question: "Can this be the initiation of state medicine?" I should reply that it is more than the initiation; "It is later than we think."

Because of that belief and because of the associated belief that any form of state medicine will be started in the state and not in the Nation as a whole, even though it be aided and abetted by the Federal Government, I believe it is high time that the medical profession of the state begins an active campaign to improve its relations with the public.

I have in mind a plan to tie up medical economics, public relations, health education, postgraduate education and refresher courses all in one project, because our economic condition depends upon the nature of our relations with the public, which in turn can be fostered best by a comprehensive health education program. Finally, in order to deserve better relations we need constantly to keep ourselves up-to-date professionally.

A Five Point Program for County Medical Societies

I. Improve Relations with General Public:

1. Stress value of medical services other than for the cure of disease.
2. Stress superiority of regular physicians over irregulars
3. Stress superiority of private medical care over state-controlled medical care.
4. Explain our position relative to medical ethics.
5. Explain the nature of health and disease.
6. Organize health education program based on sound pedagogic principles.

II. Improve Relations with Official Health Agencies.

1. Private practitioners as deputy health officers.
2. Seek discontinuance of services for which private practitioners are qualified.

III. Improve Relations with Voluntary Health Agencies.

1. Encourage coordination of activities to overcome duplication and meet present needs.
2. Solicit cooperation in health education campaign.
3. Seek discontinuance of services for which private practitioners are qualified.

IV. Improve Relation with School Health Agencies.

1. Encourage periodic physical examinations by family doctors.
2. Seek discontinuance of correction of physical defects by school agencies.

V. Improve Ourselves to Deserve Better Relations.

1. Postgraduate and refresher courses.
2. Better methods of cooperation with the public.

O. M. Rott, *Chairman*

Medical Preparedness

The function of this Committee has been to cooperate, primarily with the National Committee on Medical Preparedness of the American Medical Association and the United States Army, Navy and Health Services. The primary problems facing the committee during the past year have been the selection, in cooperation with the county societies and the Selective Service System, of Local Examining Boards for registrants, District Medical Advisory Boards and Induction Boards; and surveys of the 2,000 physicians registered in the state.

All of the surveys were made at the request of the American Medical Association and the Federal Government and in the event of a national emergency.

The Committee reports the following results:

1. Of 2,271 questionnaires mailed to physicians in the state, 96.9 per cent have been returned. Washington state ranks as one of the six in responses in the nation (as of July 17, 1941).

2. The Committee aided in the selection of the original 76 Local Examining Boards; 16 District Medical Advisory Boards and two Induction Boards, all covering 39 counties in the state.

3. The Committee, in cooperation with the Committee on Industrial Insurance and Health, conducted a comprehensive survey of physicians practicing and available for industries.

4. The Committee, in cooperation with committees in twenty-four component societies, conducted a survey of physicians in the state who may be available, in the event of a national emergency, to serve and maintain the health of the civilian population.

R. L. Zech, *Chairman*

Neoplastic Committee

During the last year, a few talks were given by members of the Committee in various parts of the state, but most of their activities have been directed to supervising and assisting the Women's Field Army in their campaign. This phase of the work has been so important this year that a separate report (attached) on activities of the Field Army is being made by the State Commander, Mrs. Ralph Hanson.

In December of last year, a proposal was made to have an out-of-state man devote an entire month to giving talks both to physicians and lay audiences. The speaker would be provided with slides and motion picture films, and during this length of time he would be able to cover every county in the state. The estimated cost was $2,000, half of which would be paid by the National Cancer Institute. Dr. John Wirth of Baltimore reported to us that this plan had scored a very great success in Oklahoma and the Medical Association there was extremely well satisfied with results of the campaign.

The Committee considered this proposal at a meeting held on January 10. They felt that the plan had a great deal to recommend it, but were not able to suggest any method of raising the required funds. It was finally suggested that some modified plan might be worked out in connection with the Committee of Graduate Medical Education and Hospitals, of which A. B. Hepler is Chairman.

The Committee appreciates the cooperation of the State Department of Public Health in providing literature for the Women's Field Army, for their various campaigns. As Chairman of the Committee, I would like to thank the members of the Committee and members of the Women's Field Army for their cooperation during the past year.

Charles B. Ward, *Chairman*

Report of Educational Program Conducted by Women's Field Army for Cancer Control

The Women's Field Army carried on its program of education on cancer in twenty-six counties this year as compared to twenty-one last year.

Over 125 talks were given by physicians, 60,000 pieces of literature were distributed, furnished by the State Department of Public Health. Some 5,000 letters were sent to firms and individuals, 1,325 inches of publicity were donated by our newspapers in dailies, community papers and Alaska weeklies; and 46 radio programs were given in addition to many spot announcements.

Seattle: In the City of Seattle 4,000 pieces of literature were distributed to the Health Center of the University of Washington; 1,500 pieces to public schools and the nursing staff; 1,500 to Seattle Colleges and a quantity of literature to the Visiting Nurse Service; 1,000 pieces were given the Fire Department for distribution. The Seattle unit of the Women's Field Army has undertaken to maintain two hospital beds for cancer patients of the middle class, and raised something over $600 for this project during our campaign. The motivating spirit prompting the project was not alone to stimulate interest in the educational program, but they felt something concrete would be better supported than a purely educational program.

Memorial Funds: In Spokane $48 were given toward the memorial fund; in Olympia $45 were given as a memorial; in Mason County $7 were given toward a local project and in Cowlitz County seven organizations donated to their memorial fund.

Films Shown: The film "Choose to Live" was shown in six of the larger centers of population to twenty-one audiences. In Spokane it was shown in sixteen elementary schools to 4,860 students. Beginning in September and until March 1, the film will be used in all high schools in Spokane.

Colleges: Lectures on cancer were given to all freshmen students at Washington State College and 1,500 pieces of literature were distributed there. Lectures were given also at the Eastern Colleges of Education at Cheney, and also at the Central College of Education at Ellensburg.

Rural Areas: The rural areas of at least six of our counties were especially well covered as follows: In Lincoln County fifteen granges were reached with our literature; in Cowlitz County all small communities were contacted; in Pierce County our Vice-Commander distributed literature into twenty-two communities, personally and by mail, also into all Parent-Teacher groups; in Snohomish County ten programs before clubs were given; in Chelan County eighteen Parent-Teacher groups heard talks on cancer given by doctors; and in Spokane county letters were sent to each of the thirty-one Home Economics groups over the county.

Women's Clubs: Owing to the fact that the State Federation of Women's Clubs in Washington sponsors our cancer program, the State Commander is requested to make yearly reports to this body, and the members are helpful in most communities in promoting our program. Dr. Frank E. Adair's article, entitled "Encouraging Aspects of Cancer Control," was used in its entirety in the April issue of the *Washington Club Woman,* which reaches over 9,000 club women. The State Commander appeared on the general program of their convention held in Yakima last year.

Medical Association and the Auxiliary: Members of the woman's auxiliaries are asked to give this program their moral support. In some communities doctors' wives, as individuals, are very helpful in furthering our program, but as a whole the auxiliaries do not cooperate as fully as naturally would be expected. Last August the State Commander gave a brief report of the Women's Field Army program before the convention of the State Medical Association.

Funds Raised: In the enlistment campaign held in April a net amount of $2,203.60 was raised, of which $661.08, or thirty per cent, was sent to the National Headquarters, leaving a balance of $1,542.52. In compliance with the decision of the State Neoplastic Committee that for counties making their quota (which is $1 membership to each 100 people) the amount over their quota, plus forty per cent of the quota would be returned for use in their communities. We sent to Mason County, Columbia County and Cowlitz County the amount of $289.46, leaving a balance of $1,253.06 on which to operate in 1942.

Only because of the assistance of the State Health Department in furnishing us literature and the fact that our office rent is donated, and other expenses kept to a minimum, could we carry on such an extensive educational program in the State of Washington.

Mrs. Ralph Hanson, *State Commander*

Publication

During the past year matters pertaining to activities of our State Association have been published monthly in Northwest Medicine under the Washington division of State Sections. An endeavor has been made to include in each monthly issue material bearing on various phases of the organization's activities. In the October issue appeared the report of the annual meeting which was held in Tacoma, with substantial reports from various committees and the new Constitution which was revised to date.

Attention is called to a new feature of the Journal which during recent months has appeared with the cover in color, the color being varied each month. This has been in accordance with the custom which prevails among a large proportion of the state medical journals. The committee desires to announce that, if any members have suggestions or criticisms relative to the editing or publication of the Journal, they are requested to submit such either to this committee or the editorial staff. In either case such communications will receive consideration.

H. G. Willard, *Chairman*

Public Health and Sanitation

In 1939 the Committee on Public Health and Sanitation decided that the following were the objectives of the Committee:

1. To serve as a contact agency between the State Department of Health and the State Medical Association.
2. To study problems relative to health in the state, to develop a program to be submitted to the State Medical Association for the purpose of increasing the interest of private physicians in public health procedures.
3. To submit to the State Medical Association recommendations of a comprehensive public health program, together with recommendations concerning a specific and immediate program for such action as the State Medical Association may care to take.

At that time the Committee outlined something of a comprehensive program, and made specific recommendations concerning an immunization program to be participated in by the physicians. It is interesting to note that the number of recorded cases of smallpox during 1940 declined markedly.

Your present Committee on Public Health and Sanitation recognizes the objectives set forth in 1939.

The following are problems which have come to the individual attention of one or more of the members of the Committee during the current year, and which were considered at the meeting of that Committee on July 18, concerning which recommendations are made in this report.

Problem 1. The Committee found there was reason to believe that physicians could avail themselves of services of private laboratories and private hospitals in performance of certain public health laboratory procedures, for such of their patients as are able to pay for such laboratory service. The Committee believed that certain impositions have been made upon the State Department of Health laboratory that were somewhat responsible for a number of false rumors circulated to the detriment of both the medical profession and the State Department of Health laboratory.

Problem 2. There seems to be certain evidence concerning an increase in the amount of diabetes in this country. Drs. Lester Palmer and George Capaccio were invited to consult with the Public Health Committee on this subject. Dr. Warren Penney was also invited to consult with the Committee on this and other matters. It was pointed out that health agencies might well join with the medical profession in a program of increasing the awareness of the public relative to the problem of diabetes.

Problem 3. Dr. L. A. Dewey, Venereal Disease Control Officer, State Department of Health, was asked to consult with the Committee on the problem of venereal disease control. It was pointed out that Section 61 of Book II of the Rules and Regulations of the State Board of Health provides the following:

"No physician, laboratory technician or other person shall issue a certificate or statement that any person is free from any venereal disease infection, and no health officer shall accept any certificate from any physician whatsoever, stating that the person suspected of suffering from any disease mentioned in these regulations, as evidence that such person is not so infected."

It was further pointed out that, should even a very small number of physicians be unaware of this regulation, and should see fit to issue such certificates, they might be used in a number of instances to improve the business of prostitution. It was pointed out that a person may be examined by a health department and found to be infected, and may through douching or other procedure cleanse herself sufficiently to be able to present herself to a physician immediately thereafter and he would be unable to find evidence of infection.

It is also felt that a consideration might be given to the establishment of refresher courses for physicians in the diagnosis, treatment and control of the venereal diseases.

Problem 4. The Committee found that not only were ranks of the profession experiencing a demand of the military forces for personnel, but also various health departments were having a similar experience. It was felt it was increasingly important that members of the Medical Association be actively interested in the organization, personnel and program of the various local health departments, so that the best cooperation possible exist between the health departments and the profession, and that the standards at present obtaining in public health work be not lowered.

Recommendations

The Public Health Committee presents the following resolution:

Whereas: The Committee on Public Health and Sanitation of the State Medical Association have studied certain problems of mutual interest to the medical profession and the official health agencies, as set forth in the report made to the Convention at the 1941 meeting; and

Whereas: The Committee believes that these problems may best be met by a definite program on the part of the Public Health Committee supported by the State Medical Association during the coming year, be it

Resolved: That

1. The Public Health Committee be authorized to prepare a form on the order of that here attached which shall be printed and furnished to local societies by the State Medical Association for use of members of the local medical societies at the time they submit blood samples to the public health laboratory for serological examinations; and
2. That public health laboratories of the official agencies be requested to make certain tabulations concerning serologic specimens received by such laboratories and concerning information received on recommended forms here mentioned: *Provided,* That nothing in this resolution shall be interpreted to mean that Washington State Medical Association infers that this procedure shall in any way prohibit the official health agency from making necessary investigations involved in the program of venereal disease control in this state.
3. That there be appointed a subcommittee on diabetic control to the Committee on Public Health and Sanitation of Washington State Medical Association, which shall be for the purpose of studying the problem of diabetes and molding a program of education on the subject of diabetes, and that the committee be given authority to accept assistance of any lay organization qualified to help in such program of study and education;
4. That each County Medical Society, or each Medical Service Bureau, be charged with the responsibility of establishing a register of diabetics cared for by physicians, such register being of a nature which will prohibit the identification of the individual, yet providing a means of ruling out duplication of reports, this being possible if the physician will report the initials of the patient and the birth date of the individual;
5. That the Public Health Committee be authorized to circularize each local health department through the Executive Secretary of the State Medical Association, concerning Regulation 61 of Book II of the Rules and Regulations of the State Board of Health, which prohibits issuance of certificates of freedom from infection in venereal disease by physicians, so that all physicians may be informed concerning this regulation;
6. That the State Medical Association go on record as supporting the regulation of the State Board of Health (Regulation 61 of Book II, Problem 3, page 384, col. 1);
7. That the State Department of Health be requested to establish refresher courses for physicians in diagnosis, treatment and control of venereal diseases, and that the State Department of Health cooperate with the Committee on Graduate Medical Education and Hospitals of the State Medical Association in this endeavor, at such time as the Committee on Graduate Medical Education and Hospitals completed a plan to be put into operation in a program of refresher courses for physicians in this State; and
8. That in these times of national defense and of demands for persons from the profession and official health agencies, each local medical society be sincerely and actively interested in the administrative personnel and technical problems of each local health department, and insist that replacement of personnel of local health departments be made with the best qualified available personnel, and appointed only after

approval of the State Department of Health concerning the individual's qualifications.

The Committee on Public Health and Sanitation is cognizant of the work of the Committee on Maternal and Child Welfare, and compliments it on its splendid and active program in this past year, and offers it any support and cooperation it may request; the Committee recognizes the splendid work and activity of the Committee on Tuberculosis, and compliments it upon its program and activity, and offers it any support requested; the Committee is obligated to the Executive Secretary of the State Medical Association for his cooperation and assistance, and to the consultants called in for the meeting of the Committee for July 18. Donald G. Evans, *Chairman*

Public Laws

There were 1,056 bills introduced in the last Legislature and 254 of this number were passed by both houses and approved by the Governor. Fourteen affected medicine or public health. There were twenty-seven more bills introduced affecting medicine and public health which failed.

A review of the fourteen bills enacted into laws follows:

S. B. No. 25: Requires school boards to provide means of testing the hearing annually of all children attending public schools, except in cities and districts of over 25,000 pupils; calls for report and record on the tests. Appropriates $800 from General Fund.

S. B. No. 60: Is an amendment to a 1933 law creating sanitary districts for the collection and disposal of garbage and other waste matter in territories outside of incorporated cities and towns.

S. B. No. 91: Is an amendment to the law which created the McKay Memorial Research Hospital at Soap Lake. It extends hospitalization to indigent citizens within that area but sufferers of Buerger's disease hold preference at all times.

S. B. No. 172: Is an amendment to the Workmen's Compensation Act calling for increased awards to injured workmen, dependents and beneficiaries, totaling two to two and one-half million dollars more.

S. B. No. 182: A new law which provides for the creation of sewer districts in other than Class A counties by vote of the people; calls for election of three sewer commissioners who have power to float bond issues and levy taxes for district sewer systems.

S. B. No. 190: Is an amendment to Workmen's Compensation Law defining extrahazardous employment; defining occupational diseases and providing for compensation for disability or death resulting therefrom.

S. B. No. 215: Is an amendment to Section 6930 of Remington's Revised Statutes which relieves counties from payment for the support and maintenance of indigent insane persons committed to state institutions from such counties.

S. B. No. 325: An Act which provides that the Crippled Children's program be transferred from Social Security Department to State Department of Public Health and extends the program and cooperates with existing agencies and groups.

H. B. No. 80: Prohibits any city of over 100,000 population and not located on tidewater from discharging sewage into waters used for domestic purposes; gives Director of Health power to order such city or cities to construct and operate sewage disposal systems.

H. B. No. 226: Is an amendment to the Chiropodist law which says: "Section 1. For the purpos eof this Act the practice of chiropody is defined to be the diagnosis and the medical, surgical, mechanical, manipulative and electrical treatment of ailments of the human foot, excepting amputation of the foot or toes or administration of an anesthetic other than local, and excepting treatment of systemic conditions or the results and complications thereof."

H. B. No. 368: Is an Act relating to practice of Dentistry; sets up a board of examiners appointed by Governor from names submitted by Washington State Dental Association; board has powers to conduct examinations.

H. B. No. 370: Is an amendment to the medical practice act which calls for a $5 annual registration fee.

H. B. No. 278: Relates to Economic poisons; defines terms in the Act; makes it unlawful to sell adulterated or misbranded economic poisons; requires all economic poisons to be labeled with the name of the poison, the manufacturer, and other information to properly identify.

H. B. No. 385: Provides for registering with the state registrar of vital certificates of all unrecorded births by filing of an order of court whereby the court has, after hearing, established the date, place and other facts pertinent with reference to the birth of the person for whom a certificate of registration is sought.

Bills Failed or Defeated

Twenty-seven bills introduced either in the Senate or House failed or were defeated. Several of these measures were vicious and designed to injure medicine and public health. The Committee on Public Laws presents a review of some of these measures, their sponsors and purpose:

S. B. No. 12: Was a measure requiring applicants for marriage licenses to submit a certificate showing applicant had taken a serologic test and is not infected with syphilis.

S. B. No. 71: Related to narcotic drugs; included "dilaudid and cannabis sativa" within definition of narcotic drugs, etc.

S. B. No. 95: Relates to naturopathy; provides examination; creates a Washington State Naturopathic Integral Association; grants full power to regulate themselves.

H. B. No. 160: Related to Medical Aid contracts; would repeal the medical aid contract law.

H. B. No. 175: Was introduced by Dr. U. S. Ford of Forks, and called for creation of Public Hospital Districts. The bill called for election of three hospital district commissioners who had power to condemn, purchase or build hospitals by tax levies, including maintenance. It would grant free hospitalization to citizens within area.

S. B. No. 247: Related to Health Insurance; called for payments by employers and employees to a Health Insurance Board; provided disability benefits; medical care with any and all practitioners participating, etc.

H. B. No. 173: Created a State Restaurant Board which had power to inspect and supervise health conditions in eating places.

H. B. No. 202: Would prevent compulsory vaccination.

H. B. No. 371: Called for a revision of the Drugless Physicians' Act; eliminated the use of "Doctor" by drugless healers; called for $5 annual registration fee; defined drugless practice.

H. B. No. 475: Related to "Practical Nurses." The title was changed to "Attendant Nurses"; set up a board for examinations; would require issuance of licenses.

S. B. No. 261: Related to food and drug adulteration; placed power in state director of Agriculture to demand samples of drugs, inspection, etc.

S. B. No. 317: Would have provided for a "Sanipractic physicians' Examining Board" with powers to make own rulings, etc.

H. B. No. 521: Related to hospitals; eliminated the 200-bed requirement for county or city hospitals; etc.

There were several other measures, some favorable and others not favorable, all of which either died in committees or failed to pass both houses.

This Committee, especially the Chairman, wishes to express their appreciation to Mr. Anderson for his work in Olympia during the Legislature and also to give full credit to him for the report, as the data were entirely compiled by him. W. B. Penney, *Chairman*

Public Relations

Because of its confidential material, the report of the Committee on Public Relations is not released for publication. The report was presented to the Board of Trustees and to the House of Delegates.

Frank H. Douglass, *Chairman*

Resettlement

The Resettlement Committee reports that the component county societies are making their own arrangements for medical care with clients of the Farm Security Administration.

On July 25, 1941, A. L. Ringle, who was recently appointed to replace Mr. Gregg, and Mr. B. W. Bird, appointed to replace Mr. H. R. Woods as Regional Health Specialist, came to my office. From these men I learned that up to date, the physicians in the following counties are operating under a medical aid plan, caring for clients of the F.S.A.: Stevens, Benton, Franklin, Okanogan, Yakima and Clallam, where U. S. Ford of Forks is personally caring for a limited number of these clients.

Officials of the F.S.A. have contacted Thurston, Lewis and Spokane counties but as yet have reached no agreement. This Health Association was organized as one unit for the two counties, Benton and Franklin. J. L. Greenwell of Pasco is Chairman of the reviewing committee of doctors who are participating.

Attached are the regular monthly reports as prepared by Mr. R. C. Baxter, trustee for the pooled fund. This program began operating July 1, 1940. The reports for July, August and September are very gratifying and especially interesting because they are the first indication of actual operation of this type of medical care program in the State of Washington.

January 24, 1941, the Board of Trustees of King County Medical Society approved the following resolution:

Whereas: The Farm Security Administration is charged with the responsibility of the rehabilitation of the low income farm families and medical care is a major factor in such rehabilitation, and

Whereas: King County Medical Society is anxious to do its part in promoting the rehabilitation of underprivileged families, therefore, be it

Resolved: That King County Medical Society recommends that such of its members as may be chosen as the family physicians by these Farm Security Administration borrower families, give this plan their serious consideration.

Regarding Migrant Camps, there are two varieties: the permanent camps, situated at Yakima and Walla Walla and the Mobile Camps, situated at Auburn, Granger, Wenatchee, Toppenish and Athena. The migrants are handled under the Agriculture Workers Health Association, covering Washington, Oregon and Idaho. The government allots funds to this Association so that much red tape is dispensed with. Each of the camps has a medical clinic in charge of a Clinic doctor drawn from the neighboring community. He is paid $7 for the first hour and $1.25 for each 15 minutes thereafter. Full time nurses working eight hours assist the doctors.

It is suggested that during the following year the office of the Executive Secretary secure reports from the county societies which are operating under the plan and compile a statistical report.

WILMONT D. REED, *Chairman*,

BENTON-FRANKLIN HEALTH ASSOCIATION

Group Medical Care Program

Report for July, August, September, 1940

	July	August	Sept.
Families in counties	186	186	184
Families in group program	51	51	54
Individuals in group program	235	235	248
Families using service this month	9	20	15
Individuals using service this month	9	22	16
Home visits by physician	5	3	1
Office visits by physician	12	35	19
Individuals hospitalized this month	2	1	2
Minor operations	1	2	0
Major operations	2	0	0
Obstetric cases hospitalized	0	0	0
Obstetric cases not hospitalized	0	0	0
Individuals receiving dental care this month	0	0	0
Individuals receiving drugs this month	3	12	2
Approved bills for physician's serv.	$226.00	$108.25	$61.00
Approved bills for hospital services	119.50	10.50	52.00
Approved bills for drugs	5.41	15.24	5.82
Funds available for payment of bills this month	127.99	127.99	135.00
Funds aavilable for administration expense this month	5.10	5.10	5.40
Administration expense paid this month	2.55	2.55	2.70

Supplemental Report, by J. L. Greenwell, Pasco:

Experience of the Benton-Franklin Health Association During the Past Year.

The Association started out with about 52 families as members and this membership has now increased to about 80. Our charges for services at the office and house calls are on the regular private fee basis. Surgery has been done at rates comparable to $75 for an appendectomy and $25 is the allowance for obstetric care.

On this basis the first year's experience shows that we have received 90 per cent of our fees in payment; that our losses, therefore, from pro rata deductions have been only 10 per cent, whereas most of us had previously beed carrying these people on our books and collecting little or nothing.

I can say, therefore, that the program has been successful from the financial standpoint. There has been some little disagreement between the families and doctors over what constitutes emergency care, but I do not believe there has been any more of this than one would normally expect. All in all, I believe the doctors of Benton and Franklin counties are well satisfied with the way in which this program has worked out. This is based on only one year's experience.

Supplemental report, by J. E. Bittner, Yakima:

In regard to the Farm and Labor camps: We have tried desperately through three meetings with the government administrators to get a fee schedule comparable with state rates for care of these people. Various subterfuges were considered so that the work could be handled through the medical bureau. We thought that a flat fee of so much a month would be the solution, but at the last meeting the FSA felt that Washington, D. C. would only appropriate money for the care of these people on the basis of the administration's fee schedule, which is less than half state rates.

The only alternative was for the FSA to make arrangements with selected physicians for their care. At the last meeting it was agreed that the labor camps be taken care of on a clinic basis, and a physician was appointed to handle the camp clinic, all surgery to be handled by an appointed surgeon.

The Resettlement program is being handled through the medical bureau on the basis of $31 per year per family. We have had six months experience on this deal. The following notations highlight the work to date:

1. The contract was paid off at state rates.
2. The coverage is very limited in comparison to regular contracts, though obstetrics is allowed after six months. Hospitalization is limited to three days.
3. Grant money for emergency care not working out, practically impossible to get a grant through.
4. The coverage here is for 138 families, containing 622 persons.
5. The FSA promised 80 per cent or its 390 families to be under the coverage. Only 138 joined.
6. Of 622 persons served, 89 have received attention.
7. There have been 235 office calls, 15 home calls, 73 hospital days, 7 obstetric cases, 1 mastoid and 1 appendix.

Obviously the experience is too limited to be worth much except as an indication of what might be expected.

Social Hygiene

The Committee held no formal meeting, there being no special matters which could not be handled by mail. Activities were mainly advisory and furnishing social hygiene material to others who would contact the laity. To this end eight skeletonized speeches were furnished. Lantern slides were furnished to six physicians who spoke upon the subject. Lantern slides for teaching purposes were loaned to educators.

By keeping in close contact with the agencies whose activities included anything of a social hygiene or venereal disease control nature, we were repeatedly able to discourage questionable activities. The chairman served on a cost of medical care subcommittee of the Seattle Community Fund.

We furnished part of the program and an exhibit for the Washington Council of Social Workers at Wenatchee; also an exhibit covering better "Microslide Diagnosis of Gonorrhea" was gotten together for the Washington Public Health Association meeting at Yakima this spring. From the general conversation at these gatherings it was evident that those outside of our own professional organization have a poor opinion regarding the ability and inclination of the private physician to handle the venereal problem properly. Present control efforts seem to be directed towards putting the care of the venereally afflicted in the hands of governmental paid officials. Many of these workers are inclined to consider the private physicians as being poorly trained and having only a mercenary interest in venereal diseases. Sad to state, such is too often the case. There is an urgent need for physicians not upon the public pay roll to take an interest in these afflictions and give them more careful attention as a means of combating the encroachments of state medicine in this field. W. Ray Jones, *Chairman*

Scientific Work

The report of the Scientific Work Committee is the actual scientific program of the annual meeting, general scientific papers, panels, symposiums and scientific exhibits. The entire scientific program was published in the July issue of Northwest Medicine with the exception of the panel on Eye, Ear, Nose and Throat which was not prepared at the time of publication. Many of the scientific papers presented at the 1941 convention will be published during the coming year in Northwest Medicine.

R. E. Mosiman, *Chairman*

Health Committee of State Planning Council

The State Planning Council has not accomplished much during the past year. For four or five years this Council has been working on a statewide health education program in the public schools as its major project.

In the fall of 1940, while working under a grant of funds as furnished by the Washington State Tuberculosis Association, some administrative difficulties developed and the Tuberculosis League saw fit to withdraw their support to this program. I am informed, however, that an arrangement has been made with the educational department of the Washington State University to secure their help in carrying on this study, using the material and the experience thus far collected by the health section of the Washington State Planning Council, and there is good promise that this study may be carried through.

There are no outstanding accomplishments of the Planning Council Committee for this year.

H. J. Whitacre, *Chairman*

Study of Medical Care

The Committee devoted its efforts during the past year cooperating with the Advisory Committee to the State Departments of Public Health and Social Security in the study and survey of the provisions set forth in Section 15 of Initiative 141 (better known as the Old Age Pension Act).

The Committee believes, however, that a definite program should be inaugurated, in cooperation with existing or special committees within county medical societies, for the study of medical care in the state.

Such a program should be based on the outline as presented by the Bureau of Medical Economics of the American Medical Association in 1937-1938, using the same instructions and forms as issued by the Bureau.

Such a survey, if properly conducted, would show the medical care given in the state and undoubtedly be of inestimable value to the county societies and also the state association as "facts on hand" to combat movements and legislation inimical to medicine, public health and the welfare of the citizens of the state.

The survey would demand finances, postage, printing, etc., and considerable time and effort on the part of committees in the county societies and state association. Washington State is one of the few lacking such a survey.

Recommendation: The Committee recommends that a comprehensive medical care survey be inaugurated for the period of 1941-1942. A. P. Duryee, *Chairman*

Tuberculosis Committee

During these strenuous days of National Defense there is grave danger of slowing up in the campaign against tuberculosis, losing much of the gain that has been achieved. Therefore, the Tuberculosis Committee has tried to carry on a rather intensive educational campaign to keep before the general public and medical and nursing professions the vital need of maintaining constant warfare against tuberculosis.

The Committee has confined its efforts to a few definite projects:

General Public: 1. In cooperation with the Washington Tuberculosis Association, members of the Committee have given talks before various groups such as Parent Teachers Associations, schools, clubs and other organizations. They have also assisted in tuberculosis essay contests.

2. Illustrated lectures were given at the Central Washington College of Education, Gig Harbor Parent Teachers Association, Seattle High School Principals' Club and at a conference of Tuberculosis League Secretaries.

3. National Defense Program: Tuberculosis was responsible for the death of more than 3,500 of the soldiers and ex-service men of the last World War. Treatment and pensions have cost the Government over a billion dollars. This was due primarily to the fact no adequate means were utilized to rule out tuberculosis among recruits. In the present National Defense program the Government desires to eliminate from service all men having tuberculosis. The roentgen ray is recognized as the most efficacious factor in spotting such men. Unfortunately the Government has been extremely slow in carrying out this program. In the State of Washington practically the only recruits roentgenized are commisisoned officers, and those showing definite symptoms of tuberculosis. It is absolutely certain a large number of cases have been missed. This Committee has given the subject considerable study. Correspondence has been had with the U. S. Surgeon General and personal visits made to Army officials in our state. Recommendations were submitted to the Board of Trustees of the Washington State Medical Association that the Government by the use of the roentgen film reject from service all those recruits having active tuberculosis lesions and those with inactive lesions which under stress of service might become active. A paper on this subject was presented before the Washington State Hospital Association in Tacoma, the National League of Nursing Education in Seattle and the State Convention of the Washington Tuberculosis Association in Wenatchee.

Hospital Study: There has been a continuation of the program endeavoring to dismiss tuberculosis infection and disease among nurses and other hospital personnel. This year twenty of the twenty-three hospitals having training schools for nurses were again visited personally by some member of the Committee and the subject discussed with the hospital authorities. The Committee feels assured the hospitals have profited by the recommendations presented last year which stressed:

1. Thorough examinations of candidates for nursing.
2. Frequent roentgen examinations of nurses, interns and all those in close contact with patients.
3. Maintenance of good health.
4. Diminution of the hazard from tubercle bacilli by the examination of sputum of all patients who cough. Consideration of the proposal to make a chest film of every patient admitted to the hospital.
5. Adequate instruction regarding tuberculosis.

While the hospitals as a whole are taking better care of their employees as regards tuberculosis there is still need for considerable improvement.

Medical Profession: With the steady expansion of tuberculosis control work in our state there has been increasing evidence of the importance of adequate chest films and the danger of poor ones. How to improve this situation has been discussed by the Committee with the State Department of Health which in 1940 adopted a regulation requiring that all school employees be examined for tuberculosis. This consisted of a tuberculin test which if positive must be followed by a roentgenogram. If no skin test is made a film is required. These roentgenograms were taken by private physicians, clinics and hospitals throughout the state and thus gave a good cross section of the type of roentgen work that was being done. These films were sent to the State Department of Health and read by a board of roentgenologists and chest men. As these films came in from all over the state one could see the urgent need of improvement in roentgen technic. The State Department of Health sent out a consultant to contact these doctors, clinics and hospitals for the purpose of overcoming their difficulties. The Tuberculosis Committee approved the recent action of the State Department of Health in discontinuing the tuberculin test and requiring a roentgenogram of all school employees.

The Committee in conjunction with the State Health Department held a Round Table Discussion on some of these films before a number of the county medical societies: Pierce, Clark, Whatcom, Skagit, Kitsap, Grays Harbor, Snohomish, Kittitas and Chelan. A good attendance was present at these meetings and an active part taken by the society members.

We believe these meetings have stimulated a greater interest in good roentgen work among the medical profession and have played a part in reducing, from 40 to 5 per cent the number of films rejected by the examining board because of poor quality.

John E. Nelson, *Chairman*

Necrology Committee

Whereas: Twenty of our members have passed to the Great Beyond since the 1940 session of the Association, be it

Resolved: That the House of Delegates of Washington State Medical Association recognizes the demise of these former fellow members and instructs the Secretary-Treasurer to inscribe with honor and regret the following names upon the records of the Association:

E. J. Lawrence, Spokane, age 58, died September 13, 1940.
S. S. Oppenheimer, Spokane, age 67, died October 20, 1940.
A. A. Matthews, Spokane, age 63, died September 23, 1940.
A. J. Helton, Yakima, age 63, died September 24, 1940.
Margaret Johnson, Spokane, age 77, died October 19, 1940.
W. G. Cameron, Tacoma, age 67, died October 23, 1940.
A. J. Drtina, Seattle, age 51, died November 6, 1940.
D. E. Rowland, Sunnyside, age 58, died January 1, 1941.
H. T. Rhoads, Everett, age 61, died February 6, 1941.
S. L. Caldbick, Everett, age 65, died February 9, 1941.
Gustave Lewis, Seattle, age 68, died March 3, 1941.
Harry Feagles, Chehalis, age 65, died March 12, 1941.
W. M. Davidson, Port Angeles, age 48, died March 24, 1941.
M. H. Perkins, Tacoma, age 83, died April 7, 1941.
M. R. Waltz, Seattle, age 50, died April 20, 1941.
E. J. Austin, Ft. Steilacoom, age 49, died May 1, 1941.
L. A. Ling, Deer Park, age 31, died May 17, 1941.
C. W. Sharples, Seattle, age 75, died July 15, 1941.
C. R. Duncan, Yakima, age 57, died July 17, 1941.
C. J. Lynch, Yakima, age 68, died July 18, 1941.

H. E. Coe, *Chairman*

SECOND SESSION

August 27

The meeting of the House of Delegates was called to order by the Speaker, Wilmot D. Read, at 3:50 p. m., Olympic Hotel, Wednesday, August 27, 1941. Upon calling the roll, a quorum was found to be present.

RESOLUTIONS

John H. O'Shea, Chairman of the Resolutions Committee, presented a complete report of the committee and its recommendations on all annual reports, resolutions and other items. The report of the Resolutions Committee follows:

Report of Board of Trustees and the President: The Committee has perused the report of the President of the Association, Homer D. Dudley, and wishes to extend our great appreciation of the splendid efforts he has put forth during his administration. The committee has taken cognizance of the recommendations offered in the report as follows:

1. The committee suggests that the reference urging closer cooperation and counsel between medical service bureaus and the state association, be referred to the Board of Trustees for further study. Carried.

2. The committee approves the recommendation of the President that members be urged to cooperate and support the activities of the National Physicians Committee for the Extension of Medical Service. Carried.

3. The committee approves the recommendation that an advisory committee be created in each county medical society for the counsel and guidance of new members. Carried.

4. Reference is made by the President suggesting the establishment of a registration fee at each meeting. The Resolutions Committee recommends to the House of Delegates that a registration fee should not be established and present the following motion:

"That it is the announced policy of Washington State Medical Association that in all future meetings of the association the county medical society, at which place the meeting is held, shall not furnish gratuitous entertainment; that entertainment shall be paid for by the individual participating therein by the purchase of a ticket." Carried.

Advisory Committee to the State Departments of Health and Social Security: The Committee recommends the adoption of the report. Carried.

Executive Committee: The Committee recommends the adoption of the report. Carried.

Finance Committee: The Committee recommends the adoption of the report. Carried.

Graduate Medical Education and Hospitals: The Committee recommends the adoption of the report. Carried.

Industrial Insurance and Health: The Resolutions Committee wishes to clarify this report with reference to the following paragraph in the report: "In April, 1941, the Committee met and reviewed the qualifications of the physicians and surgeons in the state who wished to comply with the request of the American Medical Association, and who had filled out the questionnaire regarding Medical Preparedness in the industrial field. The American Medical Association requested us to act upon the qualifications of the physicians and surgeons in the state doing industrial surgery, and we complied with their request to the best of our ability."

This review of the qualifications of the physicians and surgeons was made for the purpose of evaluation of the qualifications of the surgeons specializing in industrial surgery in this state solely with reference to the work of the Medical Preparedness Committee of the American Medical Association and has no connection with the work of the State Department of Labor and Industries.

With this explanation the Committee recommends the adoption of the report. Carried.

It was moved by A. O. Adams, seconded by M. S. Jared: "That the Committee on Industrial Insurance and Health report its findings to the Board of Trustees and that the committee take no action appertaining to the policy of the State Department of Labor and Industries without first reporting to the Board of Trustees." Carried.

Maternal and Child Welfare: The Committee recommends the adoption of the report. Carried.

Medical Defense: The Committee recommends the adoption of the report. Carried.

Medical Economics: The Committee recommends that this report be referred to the Public Relations Committee of the Association for study. Carried.

Medical Preparedness: The Committee recommends the adoption of the report. Carried.

Neoplastic: The Committee recommends the adoption of the report. Carried.

Publication: The Committee recommends the adoption of the report. Carried.

Public Health and Sanitation: The Committee recommends the adoption of the report. Carried.

Public Laws: The Committee recommends the adoption of the report. Carried.

Public Relations: The Committee the adoption of the report. Carried.

Social Hygiene: The Committee recommends the adoption of the report. Carried.

Scientific Work: The Committee recognizes and appreciates the splendid efforts of this committee in presenting the scientific program of the annual session and recommends to the House of Delegates that hearty approval and congratulations be sent to the committee. Carried.

Health Committee, State Planning Council: The Committee recommends the adoption of the report. Carried.

Study of Medical Care: In regard to the recommendation of the committee that a comprehensive survey of medical care for the period of 1941-1942 be made, the

Resolutions Committee recommends that such a survey be postponed until medical care is better stabilized than at present because of the changing population caused by the present emergency. Carried.

Tuberculosis: The Committee recommends the adoption of the report. Carried.

Resettlement: The Committee recommends the adoption of the report. Carried.

Resolution submitted by the Public Health and Sanitation Committee concerning serologic specimens received from laboratories (See Recommendations 1 and 2, page 384). The Committee recommends that in Section 1, line three, that the words "by the state medical association" be deleted. With this change, the committee recommends the adoption of the resolution. Carried.

Resolution submitted by the Committee on Public Health and Sanitation (See Recommendations 3 and 4, page 384). The committee recommends that in Section 2, the following words be deleted: "That each county medical society, or each medical service bureau, be charged with the responsibility of establishing a register of diabetics cared for by physicians," and recommends that the following words be substituted: "That a register of diabetes may be established by each county medical society, and . . ." Carried.

Resolution submitted by the Committee on Public Health and sanitation concerning control of venereal diseases (See Recommendations 5 and 6, pages 384-385). The Committee recommends the adoption of this resolution. Carried.

Resolution submitted by the Committee on Public Health and Sanitation concerning the local medical society and health department (See Recommendation 8, page 385). The Committee recommends the adoption of this resolution. Carried.

Resolution submitted by J. E. Bittner, Jr., and approved for submission by House of Delegates.

Whereas: The War Department has no authority under existing regulations to pay for emergency hospitalization and medical care to uniformed forces injured while away from camp, and

Whereas: The incomes of men in armed forces is not sufficient to allow them to pay for private hospitalization and medical care, and

Whereas: Recent experiences have thrown seriously injured members of the armed forces on the charity of the community in which the accident happened, and

Whereas: Repetition of such experiences are liable to prove a greater load than private facilities can afford and communities be forced to send all such cases to the county hospital in the locality in which these accidents happen, and

Whereas: The American Legion of the State of Washington recognizes the injustices to the men involved and have passed a resolution at their state convention requesting that action be taken in this matter. Therefore be it

Resolved: That Washington State Medical Association support the American Legion of this state; recommend that the American Medical Association give definite and immediate aid to the American Legion; and that copies of this resolution be forwarded forthwith to the American Medical Association and to each of our Congressional representatives in Washington.

The Committee recommends the adoption of this resolution. Carried.

Report of Attorney

Mr. William to Laube, legal counsel for the Association, submitted this report on NORTHWEST MEDICINE to the Board of Trustees who approved it and referred it to the House of Delegates for approval:

NORTHWEST MEDICINE was first published in 1903 by Washington Medical Library Association, a corporation organized four years earlier by a group of King County physicians independently of King County Medical Society. The publication then, as now, was conducted by Dr. Clarence A. Smith. In 1907 Washington State Medical Association by resolution adopted the journal as its official publication without, however, causing any change in its ownership or management.

The establishment of NORTHWEST MEDICINE as the official publication for the state associations of Washington, Oregon and Idaho occurred in 1909, when a tristate committee appointed for the purpose organized Northwest Medical Publishing Association. An oral lease of the journal was arranged between the new association and the library association, calling for an annual rental of $5, plus the further consideration that all books received for review and journals in exchange should become the property of the library association.

Immediate legal incorporation of the new publishing association was contemplated, but it was not obtained until 1918. Meanwhile, the association operated under a Constitution and By-laws, whereby the state associations were represented equally in its management by trustees, three of whom were appointed by and from the membership of each of the state associations. The original by-laws provided that upon expiration of the term of a trustee his successor should be elected by the remaining members of the board, provided their choice had first been nominated by the state association he was to represent. In practice, however, the board did not go through the form of electing new trustees to membership, but merely treated them as members upon their selection by a state association.

Under this arrangement the legal ownership of the publishing association rested in the trustees, who were such in a double sense, (1) trustees of the publishing association and (2) trustees holding the legal title to the memberships of the association, for the benefit of the respective state associations. It seems apparent that by this arrangement the medical associations themselves, acting through their trustees, intended to be and were the owners of the publishing association. The cover of the first sisue published by new association in August, 1909, bears the statement, "Owned and published by the State Medical Associations of Oregon, Washington and Idaho."

When the Publishing Association was finally incorporated in 1918, the trustees chose to do so under the laws pertaining to corporations for charitable, educational and social purposes, rather than under the nonprofit business corporations act, although the state associations were forbidden to hold direct memberships in the type of corporation selected. The principal reason for this choice seems to have been that a corporation of the latter type was required to pay an annual license fee as well as a $25 filing fee, while the one selected required a filing fee of only $5 and no annual fee.

The articles and by-laws of the new corporation provided for a membership similar to that set up in 1909, its legal ownership resting in the original subscribers to the articles, who were ten Seattle physicians, and their successors selected annually by the various state associations, as in the past. The by-laws, however, expressly designated these trustee-members as representatives of the various medical associations. It was also provided that, in addition to the trustees, the editor-in-chief and business editor should likewise hold memberships.

No change in the actual operation, management and beneficial ownership of NORTHWEST MEDICINE followed the incorporation of the Publishing Association. No steps have ever been taken by the corporation to acquire the legal ownership of the journal and so far as the record indicates, NORTHWEST MEDICINE is still operated under the oral lease from the Washington Medical Library Association. However, no rental actually has ever been paid to that organization.

Although the state associations may not hold direct membereships in the publishing association, the obvious inteniton expressed in the articles and by-laws is to have the ownership of the journal held equally by the state associations. The principal advantage afforded by incorporation is the limitation of the liability of its members on claims arising from the conduct of business in the name of the corporation. Except for this protection, each member engaged in the enterprise would be legally liable for all of the debts and obligations incurred in the venture.

A third party seeking damages from the publishing association for personal injuries he may have suffered through the negligence of an agent of the association, or for libel, might contend that all or any one of the state associations were responsible, upon the ground that the publication of the journal was their joint venture, and that, since the state associations could not be members of the publishing association, they could not claim the usual exemption from liability enjoyed by corporate members.

Should one of the incorporators or succeeding trustees, or the heirs of any of them, claim any individual ownership of the publishing association, it might be questioned whether the records of the association were sufficient to estop them from denying that the beneficial if not the legal ownership rests in the state associations. Again, the question of ownership might be raised in connection with the lease from the Library Association.

There is considerable doubt whether or not such contentions could be established successfully, but there is little doubt that the present organization of the publishing association may invite litigation along these lines.

The Medical Associations should themselves be members of the Publishing Association. This can be readily accomplished by reincorporating under the nonprofit corporations statute. Thereafter, the membership in the Publishing Association would be not only more definite and certain but it would have the additional advantage of remaining constant throughout the years. The present system of operating the Publishing Association through trustees appointed by the state associations may be retained upon a more sound legal basis by each association vesting in its selections for the board the right to cast its vote by proxy. At the annual meeting the proxy holders could then elect each other as trustees of the association. Such a procedure would abolish the fictional memberships in the Publishing Association now vested in the trustees.

During the course of the reorganization as a nonprofit corporation, it should be relatively simple matter to clear up all doubts as to the legal ownership of NORTHWEST MEDICINE by having both the survivors among the original incorporators and the present members of both the Publishing Association and the Washington Medical Library Association join with the Publishing Association in conveying the business to the new corporation.

It was voted that adoption of the plan be referred to the Executive Committee. Carried.

Resignation of Chairman, Defense Committee, addressed to Board of Trustees and referred to House of Delegates: "I hereby tender my resignation as a member of the Committee on Medical Defense. M. Shelby Jared, M.D." It was moved and carried that the resignation of Dr. Jared be accepted.

Election of Officers and Committee Members

President-Elect: A. P. Duryee, Everett.
Vice-President: Herbert E. Coe, Seattle.
Speaker, House of Delegates: Wilmot D. Read, Tacoma.
Delegate, A.M.A.: John H. O'Shea, Spokane.
Alternate A.H.A. Delegate: D. G. Corbett, Spokane.
Assistant Secretary-Treasurer: A. J. Bowles, Seattle.
Trustees, Eastern Division: A. E. Gerhardt, Wenatchee, and W. H. Tousey, Spokane.
Trustees, Western Division: F. H. Douglass, Seattle, and W. B. Penney, Tacoma.
Finance Committee: V. W. Spickard, Seattle, and A. O. Adams, Spokane.
Publication Committee: R. N. Hamblen, Spokane; S. F. Herrmann, Tacoma, and H. E. Coe*, Seattle.
Chairman, Medical Defense Committee: Homer D. Dudley, Seattlé.

1942 Meeting Place

Report of Committee on Place of Next Annual Meeting: "The Committee appointed by the Speaker for the recommendation for the next place of meeting, after due consideration, recommends to the House of Delegates that the City of Spokane be selected for the 1942 meeting of the Washington State Medical Association. Frank H. Douglass, Chairman." Carried.

There being no further business, the House of Delegates adjourned at 5:30 p.m., Wednesday, August 27.

V. W. SPICKARD, *Secretary*

MEDICAL NOTES

OFFICIAL POSITIONS. Wallace D. Hunt, for the past six years King County Health Officer, has been appointed Senior Surgeon for the United States Public Health Service. He has been assigned to duty as regional Medical Officer of Ninth Civilian Defense Area with headquarters in San Francisco. Emil Palmquist, Health Officer of Whitman County, has been granted six months leave of absence. He will study health administration at the University of Michigan. His place will be filled during his absence by Phillip J. Holabach. Theodore Lathrop of White Salmon has been appointed Acting Health Officer of Klickitat County. Mrs. Blanche E. Stevens, formerly of the Grace Hospital, Detroit, and recently of Seattle, has been appointed Superintendent of Kittitas County Hospital.

LOCATIONS. H. R. Bankerd has moved from Davenport to Port Townsend. Wilson McKinley of Grandview has been appointed Superintendent of Finch Memorial Hospital at State College, Pullman. Frederic L. Ball has moved from Bainbridge Island to Bremerton.

UNIVERSITY ROENTGENIZES FRESHMEN. All freshmen entering University of Washington this fall are being examined by the new technic of small roentgenograms. Four by five inch plates are made by photographing a fluorscopic screen.

ENCEPHALITIS STUDY CLOSES. The research group which has been studying epidemic encephalitis in the Yakima valley during the summer closed its temporary laboratory early in September. The study this summer was an attempt to determine possible intermediate hosts.

PIERCE COUNTY SEEKS FUNDS. The Board of Commissioners of Pierce County has applied for a $200,000 federal grant for construction of a new wing at the County Hospital. Nurses' dormitory and garage are also included in the plan.

EMERGENCY HOSPITALS PLANNED. Complete organization of disaster relief in Seattle includes the designation of certain public buildings as emergency hospitals. Since most regular hospitals are now operating practically at capacity, any large scale disaster or emergency would immediately demand additional facilities. School buildings, auditoriums, churches and club houses will be utilized in event of emergency.

RESIGNS PENITENTIARY SERVICE. Elmer Hill of Walla Walla, long physician to the State Penitentiary, has resigned his position.

WILL TEACH PATHOLOGY. Charles P. Larson, Director of Laboratories at the Tacoma General Hospital, will conduct classes in pathology in the premedic department at St. Martin's College at Olympia.

ST. MARTIN'S GETS ROENTGEN GIFT. St. Martin's Hospital at Tonasket is recipient of a $5,000 gift for the establishment of a modern roentgen laboratory. The sum was given by Mrs. Mary A. Skogland, long a resident of Tonasket. Although 91 years of age, she takes keen interest in civic affairs and has shown a great deal of interest in the hospital.

WEDDINGS. George H. Johnson of Vancouver and Miss

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* Dr. Coe submitted to the Board of Trustees his resignation as a member of the Publication Committee.

Elizabeth Bonell of Portland were married August 15. Thomas M. Leonard of Spokane and Miss Florence O'Ready of Washington, D. C., were married August 23. Conrad De Lateur of Seattle and Miss Doris Hayes of Portland were married August 20.

OBITUARY

Dr. Lawrence Hopkinson of Seattle died September 8, aged 78. He was born in Leeds, England, and as a young man moved to Milwaukee, Wisconsin. He received his medical degree from Milwaukee Medical College, graduating in 1897. He taught anatomy and practiced in Milwaukee for several years. He moved to Aberdeen, Wash., in 1912 and practiced until 1936, when he retired and moved to Seattle. He served with the Medical Corps during the first World War.

Dr. Harriet Clark of Seattle died August 20, aged 80. She was born in Coburg, Ontario, and received her medical education at University of Michigan Medical School. She began practice in Seattle 50 years ago. During the first World War she was in charge of hospitals in Salonika and Athens. In 1920 she went to India as a medical missionary. She returned five years later to Seattle and retired.

SOCIETY MEETINGS

KING COUNTY MEDICAL SOCIETY

King County Medical Society held a regular meeting in the auditorium of Medical-Dental Building Seattle, September 15, with James Berge in the chair in the absence of President Irvin Weichbrodt. Membership applications were received from Charles J. Vukov, Ernest M. Burgess and Ralph E. Dalton.

Brien King read a paper on "New Treatment for Postoperative Exophthalmos." He described three classifications producing this form of exophthalmos. About eighty per cent of patients operated upon for exophthalmic goiter return to normal within a few weeks or months. Thyroid secretion in exophthalmic goiter has been said to differ from that in normal thyroid or toxic edematous goiter. In a certain percentage of cases subjected to subtotal thyroidectomy, some remaining tissue does not revert to normal and postoperative exopmthalmos may result. Certain cases were subjected to roentgen radiation with return to normal eye conditions.

Charles B. Ward read a paper on "Roentgen Therapy of Postoperative Exophthalmos." Technic of roentgen treatment was described. There is improvement in some cases within a month, but usually this does not result until about four months. S. N. Berens discussed "Surgical Treatment for Unilateral and Bilateral Progressive Exophthalmos." He complimented Drs. King and Ward for their results from surgery and roentgen treatment of these cases. Conditions producing these forms of exophthalmos were discussed.

Charles D. Kimball presented a paper on "Stilbesterol in the Treatment of Menopause." A description was given of this drug with symptoms attending its administration, including its pharmacology and physiologic effects. A report was given of treatment of seventy patients, with reduction of troublesome symptoms attending menopause. This drug was believed superior to other estrogenic preparations for this condition.

Nathan K. Rickles read a paper on "Stibesterol in Mental Manifestations of the Menopause." He discussed the difference between menopauseal mental symptoms and the condition of involutional melancholia. Patients suffering from the former condition may be improved by this drug, but not those with the latter. Involutional melancholia is not a manfiestation of the menopause.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of Pierce County Medical Society was held in Tacoma September 9 with President T. K. Bowles presiding. Minutes of the previous meeting were read and approved.

W. N. Keller spoke concerning the Institute on Postgraduate Psychiatric Education at Western State Hospital.

Franklin G. Ebaugh, professor of psychiatry at University of Colorado School of Medicine, discussed "Modern Conceptions of Mental Disorders," basing his conclusions on statistics of 90,000 cases from 1917 to 1933.

Thomas A. C. Rennie of Johns Hopkins Hospital, presented a discussion of "Psychoneurosis," giving classification, diagnosis and treatment.

The transfer of J. L. Hansen from Okanogan County Medical Society was accepted.

The application of H. H. Meier was given a second reading, voted on and passed.

Applications of L. E. Skinner and J. P. Bowen, Jr., were given their first reading.

L. A. Hopkins made an announcement concerning minor surgical procedures under Initiative 141.

YAKIMA COUNTY MEDICAL SOCIETY

Yakima County Medical Society held its first fall meeting Monday evening, September 8, at Yakima. E. E. Osgood of University of Oregon Medical School was the guest speaker. His subject was "Chemotherapy."

AN OCCUPATIONAL FUNGOUS DISEASE

Prompt diagnosis and treatment are essential in cases of sporotrichosis, an occupational fungous disease, Frank M. Gastineau, M. D.; Louis W. Spolyar, M. D., and Edith Haynes, Ph.D. Indianapolis, point out in *The Journal of the American Medical Association for* September 27 in a report of six cases among florists.

The casuative fungus is called Sporotrichum schencki. The disease chiefly affects agricultural manual workers and tends to be disabling and chronic if not diagnosed early. It is generally initiated by an abscess due to injury of the skin, followed by a series of nodules or lumps under the skin which are painless and later ulcerate. The ulcers resemble tuberculosis of the skin, syphilis sores, staphylococcic infections or tularemia, known as rabbit fever. The authors point out that if the disease is not diagnosed early the victim "undergoes an economic loss out of proportion to his disease; he may also suffer a stigma due to a wrong diagnosis."

Discussing the source of their patients' infections the authors say: "Tabulation of the raw materials and by-products used revealed that all six handled different fertilizers, three used peat moss of different brands and all used sphagnum moss, plumosa and flat ferns. One used home-grown carnations and one grew roses. Epidemiologically, the common denominator appeared to be the sphagnum moss, the plumosa or the flat fern. . . ."

UTILIZE SPEAKERS' BUREAU

The Committee on Postgraduate Medical Education and Hospitals desires that the physicians who have volunteered for 1941-2. The subjects, with names of the speakers, are their services be scheduled by the county medical societies published in alphabetical order in this and subsequent issues until all have been listed. Requets for speakers should be made as far in advance as possible direct to the committee on Postgraduate Medical Education and Hospitals, 218 Cobb Building, Seattle.

Mullinnex, M. E.; 1106 W. Yakima Ave., Yakima.
1. Manipulative Treatment for Misplaced Tendons and Joints with Report of 100 Cases.
2. Open Reduction with Insertion of Beef Bone Pegs in the Marrow Cavity as Means of Fixation, Special Reference to Fractures of Femur in Children, and Radius and Ulna in Adults.
3. Treatment of Fractured Skulls with Special Reference to Cases where there is Herniation of Brain Tissue out through Open Wound.

Narodick, P. H.; Cobb Bldg., Seattle.
Tuberculosis.

Nelson, James M.; 407 Riverside Ave., Spokane.
1. Head Injury.
2. Liver Physiology.
3. Acute Appendicitis.
4. Dehydration, Water Balance and Parenteral Fluids.
5. Anesthesia and Cerebral Anoxia.
6. Inguinal Hernia.
7. Postoperative Pulmonary Complications.
8. Surgery and Heart Disease, Indications and Contraindications.
9. Empyema.
10. Surgical Management of Pulmonary Tuberculosis.

Nelson, John E.; Medical-Dental Bldg., Seattle.
Tuberculosis.
   1. Modern Concepts of Infection, Resistance and Allergy.
   2. Special Procedures such as Pneumothorax, Phrenic Interruption, Pneumolysis, Thoracoplasty, etc.
   3. Complications and their Management, Pleuritic Effusion, Empyema, Spontaneous Pneumothorax, Tuberculous Laryngitis, Enterocolitis, etc.

Nontuberculous Lung Conditions.
   1. The Pneumoconioses.
   2. Bronchiectasis.
   3. Emphysema.
   4. Spontaneous Pneumothorax.
   5. Carcinoma.

Nelson, J. N.; Stimson Bldg., Seattle.
Subjects Dealing With Urology.

Nixon, Edwin A.; 902 Boren Ave., Seattle.
Varicose Veins.

Odland, Henry; Medical-Dental Bldg., Seattle.
1. Eczema of Hands.
2. Contact Dermatitis.
3. Treatment of Acne.
4. Drug Eruptions.
5. Fungus Infections of the Skin.
6. Roentgen Ray and Radium in Treatment of Cutaneous Diseases.
7. Cutaneous Tuberculosis.

O'Leary, Austin J.; Medical-Dental Bldg., Spokane.
Any Topic Specified under Neurology or Psychiatry.

Palmer, Lester; 1115 Terry Ave., Seattle.
Diabetis Mellitus (any Phase of the Subject).

Parker, Stephen; Stimson Bldg., Seattle.
1. Dermatology.
2. Syphilis.

Peacock, A. H.; Stimson Bldg., Seattle.
1. Surgical Disease of Kidney.
2. Infections of Kidney.
3. Prostatic Disease.
4. Lower Urinary Tract Infections.

Pence, Lawrence C.; Medical-Dental Bldg., Spokane.
1. Availability and Performance of Radical Neck Dissection for Metastatic Carcinoma of Cervical Nodes.
2. Histologic and Endocrinologic Features of Human Menstrual Cycle.
3. Unusual Neoplasms.

Plant, Robert K.; Stimson Bldg., Seattle.
Importance of Prenatal Care.

Plum, Frank A.; Perkins Bldg., Tacoma.
1. Diagnosis and Care of Fractures of Skull.
2. Treatment of Compound Fractures of Skull.
3. Diagnosis and Treatment of Brain Abscess.
4. Diagnosis and Localization of Brain Tumors.
5. Newer Concept of Epilepsy.
6. Acute and Chronic Subdural Hemorrhages.
7. Sinusitis, Etiology and Treatment.

Powers, L. E.; City Health Dept., Tacoma.
1. Control and Treatment of Syphilis.
2. Common Communicable Diseases.
3. Any Phase of Public Health Work.

Querna, Milburn H.; Medical-Dental Bldg., Spokane.
1. Physiology of Thorax in Health and Disease.
2. Surgery of Pulmonary Tuberculosis.
3. Lung Abscess: Types, Diagnosis, Treatment.
4. Empyema Thoracis; Historical Review, Types of Disease, Principles of Treatment.
5. Bronchiectasis.
6. Acute Suppurative Parotitis and Infections of Parotid Space.
7. Regional Enteritis.
8. Traumatic Surgery of Hand.
9. Carcinoma of Rectum; Pathology, Classification, Operative Methods.

Reekie, R. D.; Medical-Dental Bldg., Spokane.
Any aspect of Obstetrics and Gynecology, including Gynecologic Endocrinology.

Rickles, N. K.; 509 Olive, Seattle.
1. Neurology.
2. Psychiatry.
3. Behavior Clinic (Psychiatric Approach to Criminology).

Rodney, Mary M.; Medical-Dental Bldg., Spokane.
1. Cancer.
2. Socialized Medicine.
3. Vitamins.
4. Tuberculosis.
5. Children's Diseases.
6. Syphilis and Gonorrhea.
7. Prenatal Care, Maternal Care.

Rohrer, P. A.; 1115 Terry Ave., Seattle.
Urology.

Rollins, Paul R.; Medical-Dental Bldg., Seattle.
Importance of Prenatal Care.

Rose, F. E.; Old National Bank Bldg., Spokane.
Gynecologic Subjects or Endocrinologic Subjects Allied thereto.

Rose, Hilton W.; Stimson Bldg., Seattle.
1. Primary Treatment of Burns.
2. Treatment of First, Second and Third Stages of Burns.
3. Relation of Fluid Intake to Burns.
4. Importance of Secondary Shock in Relation to Burns.
5. Treatment of Infection in Burns.
6. Value of Crusting a Burn, "Do's" and "Dont's" in Treating Burns, Cold Water Treatment.
7. Treatment of Burns in Children.
8. Types of Burns.
9. Prevention of Burns.

Rosenthal, S. E.; Jamieson Bldg., Spokane.
1. Rupture of the Spleen.
2. Carcinoma of the Colon.
3. Carcinoma of the Rectum.
4. Peptic Ulcer.

Ross, Wm. L., Jr.; Larson Bldg., Yakima.
1. Urology in General Practice.
2. Urologic Diagnosis in General Practice.

Rott, O. M.; Medical-Dental Bldg., Spokane.
1. Problem of Otogenic Meningitis.
2. Method of Procedure in Diagnosis of Otitic Intracranial Complications.
3. Problem of Deafness.

4. Clinical Interpretation of Vertigo.
5. What can be Done in Attempt to Prevent Common Head Cold.
6. Program for Improving Relations Between Medical Profession and the Public.
7. Role of County Medical Society in Changing Health Habits of the Community.
8. Remarks on Preparation of Abstracts for Study Clubs.

Ruge, E. C.; 4th & Pike Bldg., Seattle.
Various Phases of Insanity, such as its Cause, Treatment, etc.

Seelye, Walter B.; 1301 Columbia, Seattle.
Pediatric Subjects.

Shannon, Clarence; 4th & Pike Bldg., Seattle.
Opthalmology.

Sharples, C. W.; Stimson Bldg., Seattle.
1. Subjects that Concern Welfare of Medical Profession.
2. Diverticulosis and Diverticulitis.
3. Common Signs in Making Diagnoses of Abdominal Conditions.

Sherwood, K. K.; 902 Boren Ave., Seattle.
1. Chronic Arthritis and Allied Disorders.
2. Role of Vitamin C and Therapeutic Uses of Vitamin B.

Skinner, H. H.; 102 S. Naches Ave., Yakima.
1. Ordinary Living During Pregnancy: (a) Weight, Blood Pressure, Drinks, Smokes, Sports, Auto Excursions, Marital Relations; (b) Common Ailments; (c) Baby Born (Home, Hospital?); (d) Husband Present?; (e) Advantages of First Baby, aged 20, 30, 40; (f) Costs.
2. Pregnancy: Inconvenience, Disappointments, Discomforts, Suffering, and Dangers.
3. Delivery: Sufferings of Operations.
4. Postpartum Care: (a) Hospital, Home, (b) Exercises, (c) Birth Control.

Soderstrom, K. M.; State Dep't. of Health, Seattle.
1. Public Health Control of Tuberculosis.
2. Present Day Aspect of Epidemiology of Tuberculosis.
3. Allergy, and Pathogenesis of Tuberculosis.
4. Management of Tuberculosis out of Sanitarium.

Somers, Ray; 1301 Columbia, Seattle.
Heart Disease in Childhood.

Slyfield, Frederick; Medical-Dental Bldg., Seattle.
(Same Subjects as Listed for John E. Nelson, Seattle).

Stewart, R. H.; Stimson Bldg., Seattle.
1. Endometrial Biopsies in Diagnosis and Treatment.
2. Di-ethyl-Stillbesterol in Inhibition of Lactation.

Stier, Robert F.; Medical-Dental Bldg., Spokane.
1. Why Poor Results in Allergy.
2. Other Phases of Hayfever and Asthma.

Stroh, J. E.; Stimson Bldg., Seattle.
1. Seasonal Pollinosis. Giving Seasonal Pollen Counts, Technic of Taking Counts, their Value in Treating Hayfever and Seasonal Asthma. Flora Producing Spring, Summer and Fall Symptoms; Time and Length of Pollinating Season.
2. Treatment of Chronic Asthma, Acute Asthma and Status Asthmaticus.
3. Technic and Interpretation in Testing Allergic Patient.
4. Less Common Manifestations of Allergy.
5. Arriving at Etiologic Factors and the Follow-up Therapy.
6. Atopic Eczema, Infantile Type.
7. Chronic Urticaria.
8. Allergic Diseases.

Sweet, Wendell H.; Ritzville. Cancer Control.

Thompson, G. G.; Stimson Bldg., Seattle.
Various Phases of Obstetrics and Gynecology.

Thorp, Donald J.; Medical-Dental Bldg., Seattle.
Importance of Prenatal Care.

Trueblood, Donald V.; Medical-Dental Bldg., Seattle.
Diagnosis, Management and Treatment of Tumors, Benign or Malignant of Skin, Lip, Jaw, Oral Cavity, Bone ,Breast, Female Organs and Extremities.

Tuell, J. Irving; Medical-Dental Bldg., Seattle.
1. Acute Subdeltoid Bursitis.
2. Treatment of Fractures of Patella.
3. Treatment of Fractured Hips with Vitallium Smith-Peterson Nails.
4. Gas Gangrene.
5. Tennis Elbow.

Underwood, E. A.; Clark County Nat'l Bank Bldg., Vancouver.
1. Care of Children's Eyes.
2. Otalgia, Differential Diagnosis and Treatment.
3. Treatment of Sinusitis, Acute and Chronic.
4. General Practitioner and Specialist; How they May be of Mutual Assistance to Each Other.
5. Differential Diagnosis of Common Ailments of Eye, Treatment.

Veasy, C. A., Jr.; Medical-Dental Bldg., Spokane.
1. Management of Squint and Necessity for Early Recognition.
2. Nature of Vitamin B and its Components.
3. Vitamin B and Nerve Deafness.
4. Management of Acute Aural Suppuration.
5. Subject Pertaining to Ophthalmology or Otology.

Voegtlin, W. L.; 4th & Pike Bldg., Seattle.
Treatment of Alcoholism by Establishing Conditioned Reflex.

Ward, C. B.; Cobb Bldg., Seattle.
Radiation in Treatment of Cancer.

Warren, Edwin D.; Medical Arts Bldg., Tacoma.
1. Eye, Ear, Nose and Throat.
2. Oral Plastic Surgery.

Watts, C. E.; Medical-Dental Bldg., Seattle.
Diagnosis and General Medicine, Subjects as Requested.

Whitacre, H. J.; Medical Arts Bldg., Tacoma.
1. Cancer of Breast and Uterus.
2. State Educational Program in Cancer.
3. Bile Duct Surgery and Liver Function.
4. Duodenal Dysfunction.
5. Our Trusteeship for Science of Medicine.

Wilhelmy, Sylvester; 4th & Pike Bldg., Seattle.
Welfare Problems of Medical Society Relative to its Organization and Distribution.

Willis, Park Weed, Sr.; Empire Bldg., Seattle.
Subjects in General Surgery.

Wilson, Gale; American Bank Bldg., Seattle.
1. The Coroner, His Duties and Function.
2. Sudden Death.
3. Coronary Arteries and their Diseases.

Wood, F. L.; Lynden.
1. Psychology of Sex.
2. Sexual Abnormalities with Relationship to Marital Unhappiness.

Wright, H. Garner; Herald Bldg., Bellingham.
Importance of Prenatal Care.

Wright, Ross D.; Medical Arts Bldg., Tacoma.
Principles of Proctologic Surgery.

Proctor, Oscar S., Medical Dental Bldg., Seattle
1. Intestinal Obstruction.
2. Diagnosis and Treatment of Carcinoma of Breast.
3. Diverticulitis of Colon.
4. Diagnosis and Treatment of Carcinoma of Colon.
5. Carcinoma of Rectum.
6. Surgery of Biliary Tract.
7. Diagnosis and Treatment of Carcinoma of Lung.
8. Surgical Treatment of Peptic Ulcer.

Nutter, Paul B., 407 Riverside Ave., Spokane
1. Indications and Value of Gastroscopy.
2. Chronic Gastritis.
3. Pitfalls in Diagnosis of Gastrointestinal Diseases.
4. Practical Aspects of Proctology.
5. Treatment of Peptic Ulcer with X-Ray Therapy.

AMERICAN DOCTORS HAVE QUALIFIED FOR SERVICE IN GREAT BRITAIN

A total of 230 applications, up to September 4, had been received by the American Red Cross from physicians wishing to enroll with the Royal Army Medical Corps in response to a British Red Cross request for American physicians. *The Journal of the American Medical Association* for September 13 reports.

"Of these," *The Journal* says, "138 had been found unqualified because of age, lack of citizenship or other similar reasons. Ninety-two have been qualified and forty-two have been given passports to Great Britain; the remaining fifty are in process."

IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, JUNE 16-20, 1942

MEDICAL NOTES

Home Offered as Hospital Site. Senator I. E. Rockwell of Bellevue has offered his home to Blaine County as a hospital site. The property includes forty acres of ground and the only requirement is that they erect a suitable medical center. Mr. Rockwell wishes the hospital to serve as a memorial to his wife, Lallah Rookh White Rockwell.

Clarence Ward has opened offices in the Eastman Building, Boise. Dr. Ward has been located in Cascade and will continue to maintain that office, where he will see patients one day each week.

Regular Monthly Meetings of the staffs of St. Luke's and St. Alphonsus Hospitals, Boise, will begin in October. The staff of St. Alphonsus meets the first Tuesday of each month and that of St. Luke's the second Tuesday of each month.

Change of Date. The next annual meeting of Idaho State Medical Society at Sun Valley has been changed to June 16-20, 1942.

Health Unit Head Appointed. Paul H. Ensign has been named director of Boise-Ada Health Unit. He will take over duties next June. Denton Bock will be acting director until that time.

Respirator Presented. The Burley Lions Club recently presented a respirator to Cottage Hospital at Burley.

OBITUARIES

Dr. Oscar C. Carssow of Lewiston died August 17 after an illness of eighteen months, due to heart disease. He was 62 years of age. He was born at St. Genevieve, Missouri. He received his medical degree at Marion Sims College, St. Louis, graduating in 1898. He practiced for a time in Missouri and came to Idaho in 1906.

Dr. Charles F. Hanmer of Salmon died August 20, aged 65. He was born in Chicago, Illinois, and took his premedical training at Northwestern University. His medical degree was received from National Medical University of Chicago in 1905. He served for a time as coroner of Lemhi County, was city physician and in addition served as a member of the State Board of Examiners.

Dr. Ones F. Page of Sandpoint died August 24. He was 74 years of age. He was born in Coma, Illinois. He received his medical degree at Marion Sims College of Medicine, St. Louis, Missouri, in 1897, practiced for a time in Pullman and in 1900 moved to Sandpoint. He was interested in civic affairs and was the first mayor of the city of Sandpoint.

SOCIETY MEETINGS

SOUTHWESTERN IDAHO SOCIETY

At a meeting of the Southwestern Idaho Medical Society September 3, the following officers were elected: President, W. B. Hanford, Caldwell; Vice-President, Warren B. Ross, Nampa; Secretary-Treasurer, S. M. Poindexter, Boise.

Following the dinner the society was addressed by Dr. Frank Lahey, president of the American Medical Association. His subject was "New Advances in Medicine and in Surgery." On September 4 a clinic on diseases of the thyroid gland was conducted by Dr. Lahey at St. Luke's Hospital. He addressed the Rotary Club of Boise at their noon meeting September 4.

BOOK REVIEWS

Sulfanilamide and Related Compounds in General Practice. Wesley W. Spink, M.D., Associate Professor of Medicine, University of Minnesota Medical School. 256 pp. $3. The Year Book Publishers, Inc., Chicago, 1941.

No new class of drugs has attained such prominence and accomplished such striking results in such a short period of time as the sulfonamide derivatives. Every practicing physician prescribes these drugs and many obtain surprising results from them. Medical journals have been replete with papers decsribing them, each new member of the group exhibiting properties peculiar to it.

This book presents in a succinct and clear manner information available on this subject. There are chapters on sulfanilamide, sulfapyridine, sulfathiazole, sulfaguanidine and sulfadiazine. Following chapters consider treatment of various diseases, as pneumonia, meningitis, staphylococcic infections, diseases of the genitourinary tract. There are descriptions of the local use of these compounds as well as their employment in dermatology and dentistry.

Lymphatics, Lymph and Lymphoid Tissue, Their Physiological and Clinical Significance. By Cecil Kent Drinker, M.D., D.Sc., Professor of Physiology, School of Public Health, Harvard University, and Joseph Mendel Yoffey, M.Sc., M.D., F.R.C.S. (Eng.), Senior Lecturer in Anatomy, University College of South Wales and Monmouthshire, Cardiff, Wales. 406 pp. $4. Harvard University Monographs in Medicine and Public Health, Harvard University Press, Cambridge, Mass.

The authors of this volume have successfully and interestingly presented a most instructive study of the lymphatic system. They divide it into: (1) Lymphatic tissue in the lymph nodes, (2) Lymphatic tissue in mucous membranes, (3) Lymphatic tissue in the spleen, (4) Lymphoid tissue in bone marrow. Regarding lymph flow, it is stated "all that can be said is that massage is a very effective way of milking lymph from a part." The chapter on "Chemical Composition of Lymph" is well written, but for the average medical man is entirely too academic with its consideration of cholinesterase content and of catalase activity.

For the local Treatment of Acute Anterior **Urethritis**

(DUE TO NEISSERIA GONORRHEAE)

SILVER PICRATE*

Wyeth

Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae.[1] An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., **23**, 201 (March), 1939.

A complete technique of treatment and literature will be sent upon request

■

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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Established by private endowment, Riverton Sanatorium is operated on a nonprofit basis.
The recently erected fifty bed hospital building is equipped for modern methods of diagnosis, medical and surgical treatment of chest diseases.
Steam-heated cottages, each with private bath, provide additional accommodations.
The facilities of the institution are available to physicians who wish to use them for the care of their private patients.

The chapter on "Biological Significance of Lymphoid Tissue" is the best part of the book, for here is considered the function, lymphoid defense mechanisms, virus absorption, spread of infection, etc. In the final chapter entitled, "Practical Considerations," we find a really practical and worthwhile consideration of edema, anaphylactic shock, surgical shock, effects of heat, cold, radium, roentgen rays, etc. The bibliography is extensive, covering many hundreds of authors, and the index is large, complete and comprehensive.

G. E. Wilson

The March of Medicine. New York Academy of Medicine Lectures to the Laity, 1940. 154 pp., $2.00. Columbia University Press, New York, 1941.

During the past five years there has annually been presented a series of "Lectures to the Laity" in New York City. Measured in terms of attendance, the success of these lectures has been well demonstrated. The public is eager to learn something of diseases, their origin, nature and progress. These lectures delivered by men connected with leading medical schools deal with mental diseases, chemical warfare against disease, knowledge of the blood, story of viruses, the romance of bronchoscopy. These subjects are presented in nontechnical language in a style within the comprehension of all readers. The average layman can read it with profit.

Modern Drugs in General Practice. By Ethel Browning, M.D., CH.B. 236 pp, $3. The Williams & Wilkins Company, Baltimore, 1940.

Therapeutics, long a much neglected phase of medical training, is once more coming into its own. New chemical products have undoubtedly stimulated interest in this science about which no practitioner can know too much. This little volume takes up in some detail many of the newer drugs, especially the sulphonamides, gold salts, some of the newer cardiac drugs, sedatives and hypnotics and local anesthetics. The book is explicit as regards methods of administration and dosage. In this it is far better than the average work on drugs which does little except give the pharmacopeia dose, a relatively useless bit of information. Each drug is discussed, its mode of action is given, results in suitable cases are described and symptoms of toxicology are listed. Many preparations listed are British, but most are products of international companies, so that the book retains its value in the United States. It is a useful contribution.

The Care of the Aged (Geriatrics). By Malford W. Thewlis, M.D., Attending Specialist, General Medicine, United States Public Health Hospitals, New York City, etc. Third Edition, Entirely Rewritten, with 50 Illustrations. 579 pp. $6. The C. V. Mosby Company, St. Louis, 1941.

As years advance the number of specialties multiply. Hence has arisen the specialty of geriatrics, so that now the geriatrician cares for the ailments of those who have reached senescence. The author states this specially depends on the fact that many diseases are peculiar to the aged, and that, even though they occur in younger people, special therapeutic methods are demanded. A section is devoted to general considerations, with discussions of such problems as prevention of premature senility, prolongation of life and economic problems of old age. More than half the volume is devoted to pathologic conditions in old age. It is stated that these have been discussed since Hippocrates listed the diseases to which old persons are subject. Cicero in *De Senectute* (44 B.C.) announced that old age was not as welcome by the Mediterranean races as it was by the Chinese. There is a special chapter on surgery of the aged. Since all general practitioners are called upon to treat the aged, this volume offers timely suggestions.

Out of the Test Tube. By Harry N. Holmes, Ph.D., Oberlin College. Third Edition Revised and Expanded. 102 Illustrations. 305 pp. $3. Emerson Books, Inc., New York, 1941.

There are many facts well known to the medical profession which are mysterious to the layman who frequently desires information concerning them. The medical profession has often been charged with seeking to maintain secrecy regarding the human body and its ailments. This book is presented for lay consumption, revealing many facts pertaining to conditions of diseases, science and nature, with which everyone should be familiar.

The volume touches on a great variety of subjects. Certain chapters deal with language and tools, the elixir of life, chemical warfare, atom smashing, romance of the lazy elements, fed from the air, fuels and smoke, sugars and sweetness, the chemist in crime detection, minerals and world power. While many of these subjects are only indirectly related to medicine, they relate to the welfare of mankind and the book furnishes interesting reading.

A Manual of Bandaging, Strapping and Splinting. By Augustus Thorndike, Jr., M.D., F.A.C.S., Associate in Surgery, Harvard Medical School, etc. Illustrated with 117 Engravings. 144 pp. $1.50. Lea & Febiger, Philadelphia, 1941.

This little volume consists of full page illustrations of methods of bandaging in everyday use by all practitioners. There is a minimum of text, sufficient to call attention to the principles illustrated. It would be a handy volume for every doctor to possess as a guide for bandaging.

Essentials of Pharmacology and Materia Medica for Nurses. By Albert J. Gilbert, M.D., Instructor of Pharmacology, Aultman School of Nursing, Canton, Ohio, etc., and Selma Moody, R.N., Instructor in Nursing Arts, Presbyterian Hospital, Chicago. 251 pp. $2.25. The C. V. Mosby Company, St. Louis, 1941.

"The object of this little volume is to present the facts and theories of pharmacology and materia medica for nurses in a lucid, concise form." Each important drug is discussed as to preparation, dosage, mode of administration, action, uses and untoward effects. The volume should prove useful in any nursing school.

International Clinics. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia. Volume II, New Series Four. 299 pp, $3. J. B. Lippincott Company, Philadelphia, Montreal, New York, 1941.

The present volume of this standard work lists clinics presented by the faculty of Yale University School of Medicine, New Haven, Conn., and by members of the staff of Good Samaritan and St. Josepph's Hospitals and the Lexington Clinic, Lexington, Kentucky. As is always true of such presentations, the information is timely, interesting and clinically valuable. Twenty-two articles are included, and a few might be mentioned as specially valuable, Functions of the Adrenal Glands, Clinical Significance of the Venous Pulse, Treatment of Bronchospastic Dyspnea and Cheyne-Stokes Respiration with Iodized Caffeine, Surgical Treatment of Hypertension, Endemic Amebiasis, Chronic Gastritis. Short of visiting a large number of hospitals, there is probably no better way of keeping up to date than following these published clinics.

NORTHWEST MEDICINE

JOURNAL OF OREGON STATE MEDICAL SOCIETY, WASHINGTON STATE MEDICAL ASSOCIATION
AND IDAHO STATE MEDICAL ASSOCIATION
ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION
Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879. Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 8, 1917, authorized July 31, 1918.

Vol. 40, No. 11 NOVEMBER, 1941 $2.00 per Year

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

MEDICINE AND AVIATION

Medicine, after early interest and then long neglect, has begun to catch up with mechanical progress in aviation. Developments now taking place may soon enable man to utilize the talents which he has already built into his machines.

First balloon ascension by man was made October 15, 1783, and two years later, in 1785, a Boston physician, Dr. John Jeffreys, accompanied a French balloonist in the first flight across the English Channel. First high altitude flights were made nearly eighty years ago and the effects on the balloonists stimulated a French physiologist, Paul Bert, to study the physiologic reactions to high altitude. He soon reached the conclusion that symptoms were due to anoxia and in one flight sent along some of the gas in bags. Due to the small amount available, it was decided not to use oxygen until the need for it was felt but this course proved disastrous, due to complete absence of warning symptoms in this condition. The balloon reached 28,820 feet. Two of the men perished and the third survived, although he was rendered unconscious at 26,000.

Unfortunately, there are no symptoms or indications of oxygen want which might give warning to those approaching danger from this source. Even though an experimental subject may show serious incoordination and erratic behavior, he does not realize his true condition and has no recollection of it afterward. Those who have been rendered momentarily unconscious by failure of oxygen apparatus at high altitudes remember nothing of the episode. It is for this reason that crew members in high altitude flights always work in pairs.

Paul Bert was the first to develop a low pressure chamber similar to those in which simulated flights to high altitudes are now conducted. His conclusions and deductions must be considered amazing and the ground work he laid for aviation medi-

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1. Armstrong, H. G.: Principles and Practice of Aviation Medicine. The Williams & Wilkins Co., Baltimore, 1939.

cine can only be compared to that which Beaumont laid for gastric physiology. Medical interest subsided with decreasing interest in balloon ascensions and did not follow to any extent the development of the airplane, although the Germans did do some work in pilot selection and provision of oxygen in the early years of the first world war.

Modern interest in the physiology of decreased atmospheric pressure is quite recent. The advent of airplanes which could readily reach and efficiently maintain altitudes of over thirty thousand feet is very recent. The present model of the Boeing flying fortress was designed to give sea level performance at about 28,000 feet and will rapidly climb to altitudes which are at present unsafe for man, even though he breathes an atmosphere of 100 per cent oxygen. Indeed, no one knows just how high the airplane will fly.

Haldane in England and Bulbulian, Lovelace and Boothby in this country have designed efficient masks for administration of oxygen which are much less wasteful than the older tube method and are reasonably comfortable for the wearer. With present equipment these planes are taken to 35,000 feet, at which altitude the crew, breathing 100 per cent oxygen, has about the same amount of oxygen available as when breathing normal air at sea level. At these levels man becomes unconscious in about one minute without oxygen and suffers respiratory paralysis shortly thereafter. The latter change is permanent as far as present knowledge is concerned.

To reach alitudes higher than 35,000 feet man must be provided with oxygen at pressures higher than the 179 millimeters of mercury which there prevails. The answer seems to be in pressure cabins or pressure suits for crew members. Perhaps with this equipment man may be able to find the ceiling of the planes which he has already developed.

INCREASED LONGEVITY

Data obtained from mortality tables of the Bureau of the Census[1] reveal interesting facts concerning the increased average length of life amounting to nearly thirteen years since 1900, when the average for white persons was 50 years. By 1920 it had increased to 57 years, by 1930 to 59.2, while 1940 extended it to 62.5. The average lifetime of women exceeds that of men. In the 1940 census the average life of women is 64.5, for men 60.6 years, while in 1900 the respective ages were 51 for women and 48 for men. Thus during forty years the average length for women was extended by 13.5 years, for men 12.5.

A study of these tables discloses that the age beyond seventy or more years has not been materially extended, since the average lifetime of such persons in 1900 was 79.0 for white males, compared with 79.3 in 1940. The extension of average length of life has been produced solely by improvements in living conditions and advances in medical science. This is illustrated by the fact that infant death rate has been cut in half during the last forty years. During the period from 1900 to 1920, of 1000 white male babies born 133 died during the first year of life, while during the past decade this has been reduced to 57 per thousand; also the rate for girl babies was reduced from 111 to 45 during the same period.

The lower death rate among women continues from birth to advanced years. While statistics show that 105 males are born to every 100 females, this is offset by the higher death rate among males. This extension of average lifetime among women is decreasing the excess of males in the United States, so that it is estimated before many years this country will likely compare with older established nations showing a female majority.

The average lifetime of colored people is less than that of whites. During the decade ending in 1940 their average was 50 years for males and 53 for females, being approximately ten years lower than whites. Their infant death rate during this period was 83 per thousand for males and 69 for females, being approximately the rates of the white population of twenty years earlier.

While this increased longevity is a matter of pride, indicating superior living conditions and advance of medical knowledge in our country, one cannot but speculate whether the limit has been attained. It would not be reasonable to anticipate a corresponding extension of longevity during the coming decade. No comparative figures are available concerning similar data in European countries. The probability is, however, that they would not compare favorably with the returns in the United States.

OPPORTUNITIES FOR GOVERNMENT MEDICAL SERVICE

Because of critical need for medical officers at the present time in various lines of government service, the Civil Service Commission has announced a restriction of previous requirements for application. Applicants for the Associate grade may not yet have completed interneship. Date of graduation for this grade has been set back to May 1,

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[1] The National Underwriter, Aug. 15, 1941.

1930, and the age limit for all grades has been advanced to fifty-three years. Hitherto the important fields for medical governmental acceptance have been in the Army, Navy and Public Health Service. In addition to these lines of work there are demands for medical service for physicians in the Indian Service of the Department of the Interior. Civil Service employment may extend from Panama to Alaska, including quarantine and immigration inspection, the Indian Service, Alaska and various other lines of endeavor.

The Veterans' Administration employs more Civil Service physicians than any other government agency, comprising regional offices, facilities and diagnostic centers. These may extend to hospital work, regional offices and homes. Diagnostic centers are located at Washington, D. C., Hines, Ill., and San Francisco, Calif., while small clinics for diagnosis and treatment of malignant growths are located in New York City, Washington, D. C., Atlanta, Ga., Portland, Ore., and Los Angeles, Calif.

At the present time chances for early appointment of recent graduates of Class A medical schools who have served an approved interneship, are good in the government service. While a physician cannot expect to attain wealth in government civil service employment, he is assured of a competent salary, permanent employment during active years and provision for retirement age. The majority of physicians in the Associate grade receive a salary of $3,200 a year, minus three and a half per cent deduction for retirement purposes. Opportunities are good for advancement to $4,600 and $5,600 a year. Those demonstrating administrative ability may advance to $6,500 and $7,500. If one wishes further information concerning this form of Civil Service employment he can apply at any first or second class post office or direct to United States Civil Service Commission, Washington, D. C.

LAY MEDICAL SPECIALISTS

Oftentimes one is inclined to lament the existence of large numbers of laymen who pursue various lines of medical practice which are legitimate procedures of medical practitioners. Probably the greatest number are enrolled as optometrists and chiropodists who have become successful practitioners in their lines of activities. If one has not attempted to analyze the reasons for the untrammeled existence of these lay specialists, food for reflection may be obtained from reading the following editorial entitled "Undermining Medical Practice," from *New York State Journal of Medicine*.[1]

> If it were not so serious, one could derive a certain amount of amusement from the clamor that periodically arises when some branch of medicine is encroached upon by nonprofessionals and is tolerated and even encouraged by the law. In the years gone by ophthalmology has given birth to the optometrist and optician. General practice has sired the physiotherapist. Anesthetists are responsible for the large number of nurses who have intruded into the specialty. There has even been a movement to qualify laymen as "audiometrists" who would be eligible to test hearing with an audiometer.
>
> We, as a whole, have no one but ourselves to blame for this situation. It is a result of carelessness, but more so of indolence in the performance of the time-consuming details attendant upon every branch of medicine. Others have been quick to see the lucrative possibilities of these stepchildren of medicine. They have had our unconscious support in the development of these fields during the past decade and a half, when the medical profession was intense in the encouragement of specialization.
>
> When the world depression began to affect the income of physicians, it began to dawn upon us that we had relinquished a considerable source of revenue which rightly belonged to the doctor. Rectification of the situation was impossible. There are still fields in which there is a tendency to relegate medical functions to laymen. In radiology, dermatology and orthopedics, to name a few, one sees this inclination all the time. If we are not to be further encroached upon, it is up to us, and us alone, to stop it.

HAWAII MEDICAL JOURNAL

The latest addition to state medical journals appears in vol. 1, no. 1 *of Hawaii Medical Journal* published bimonthly by the Hawaii Territorial Medical Society which was inaugurated in 1856 under the Monarchy. The initial slogan is: "The bulletin is dead. Long live the Journal." "The journal should be a medium by which the minds of our confreres may be brought into focus on problems which concern us all, problems having to do with better standards, better practice, better health regulations, better laws." What more ambitious program could be announced as the future policy of any medical journal in any state of the Union.

The initial issue admirably contains papers pertaining particularly to this territory. Some of the titles are "Rheumatic Heart Disease in Hawaii," "Poliomyelitis in the Territory of Hawaii," "Ectopic Pregnancy in Hawaii," "Leprosy in Hawaii." It is interesting to note that the last article is written by a Chinese physician. This first issue appears in an attractive form, handsomely published on good quality of paper, well edited and in every respect a publication to the credit of the medical profession of Hawaii.

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[1] Undermining Medical Practice. Editorial, New York State J. Med. 41: 1914, Oct. 1, 1941.

ORIGINAL ARTICLES

PRESENT DAY INSULINS*

Lester J. Palmer, M.D.
George D. Capaccio, M.D.
SEATTLE, WASH.

It is well known that the clinician has available three instrumentalities for treatment of diabetes mellitus, namely, diet, insulin and exercise. Results of treatment depend largely upon the balanced application of these three agents. They must be applied intelligently, and full consideration must be given to the physiologic effect of each. The following remarks are confined to the employment of the second agent, insulin.

It is now more than twenty years since the epochal discovery of insulin by Banting and Best. In January, 1921, a diabetic, fifteen years of age, was the first human being to receive by subcutaneous injection this active principle of the islands of Langerhans.

This was an impure product of low potency. Soon the potency was increased and purification accomplished. The preparation is known today as plain, or regular insulin. Fifteen years of experience with it established many of the principles of the diabetic diet in current use and clarified much of our present knowledge regarding the course of diabetes.

It is a quick-acting, but short-acting insulin, its effect enduring for from four to six hours. Therefore, to obtain sustained effect in those patients where the hormone deficiency was large it became necessary to administer insulin as often as every six hours.

It was natural, therefore, that the clinician sought a long-acting insulin which could be administered once in twenty-four hours, the unit of living time, and which would maintain an even and enduring effect during this time, thus avoiding the necessity for frequent injections. After many modifications of the original preparation had failed to meet these requirements, Hagedorn, in 1935, developed protamine insulin which, upon clinical trial, proved to be a twelve-hour insulin; that is to say, the effect endures for twelve hours after injection.

This protamine insulin was soon improved by Scott and Fisher, who, in 1937, added minute quantities of zinc and thus prolonged the effect to twenty-four hours or more. Such insulin is now known as protamine-zinc insulin.

A short time later, in 1939, a solution of insulin crystals was developed. To this was added fractional quantities of zinc as compared to that added to protamine-zinc insulin, and it is now known as crystalline insulin. Considerable effort was made to show this to be a twelve-hour insulin, but final data have shown that the effect does not endure beyond eight hours. In the past two years, crystalline insulin has largely replaced plain or regular insulin as a quick-acting, short-acting insulin, for the reasons that its effect is sustained for a slightly longer period, it is a more highly purified product, and the protection patents are more recent.

Current studies include histone insulin which seems to have no advantage over protamine-zinc insulin, and clear protamine insulin which seems to have no advantage over plain protamine insulin.

Newer and better insulins may be developed in the future, but today there are available for general clinical use protamine-zinc insulin, a slow-acting, long-acting insulin, and crystalline insulin, a quick-acting, short-acting insulin.

Plain or regular insulin is still available, and is still used by many who have taken insulin for a long time, but is not needed in the present day treatment of new diabetics. Old users of insulin may be changed, often to their advantage, to either of the two insulins first mentioned or to a combination of them.

To employ insulin efficiently in the treatment of diabetes mellitus, it is essential to understand and to keep in mind the physiologic effect of each type of insulin; the slow-acting protamine-zinc, and the quick-acting crystalline insulin.

Protamine-zinc insulin is the fundamental insulin because, if a diabetic requires exogenous insulin, it is this slow, long-acting insulin that most nearly simulates the natural supply from the island cells. The effect of this insulin extends over the twenty-four hours approximately as follows: During the first four hours after injection, approximately 10 per cent of the injected dose becomes available; during the next six hours, approximately 20 per cent; during the next four hours, approximately 30 per cent; and during the next ten hours, approximately 30 per cent. This makes a total of 90 per cent of the injected dose which has been expended. In most cases this leaves 10 per cent of the dose still available after twenty-four hours, and its effect overlaps the next dose. On each day, after the first injection of protamine-zinc insulin, there is available, during the first four hours after injection, 20 per cent of the daily dose. This consists of 10 per cent from the previous day, added to 10 per cent from the present day.

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*Read before the Fifty-second Annual Meeting of Washington State Medical Association, Seattle, Wash., Aug. 24-27, 1941.

Because protamine-zinc insulin has an enduring effect for twenty-four hours, it is logical that this be administered only once a day. Because 60 per cent or more of the effect of each injection is expended during the hours when food is ingested and digested, it is logical that the administration precede the first meal of the day.

To administer a twenty-four hour insulin every twelve hours is to ignore the expected physiologic effect. Such a procedure results in overlapping of the effective period and increases the risk of hypoglycemia.

To administer the major fraction of the exogenous insulin after the postprandial periods of glucose production as, for example, in the evening, not only disregards the expected physiologic effect of the insulin, but also disregards the correlation of periods of glucose production and insulin effect. The portion of the twenty-four hours during which food is taken corresponds with the period when exercise is taken. To precede this portion of the day by insulin administration takes full advantage of the known fact that exercise aids the metabolism of the diabetic most during periods of insulin activity.

To obtain the greatest therapeutic efficiency, the rate and duration of insulin effect and the period of glucose production must be synchronized. Food is taken between the hours of 7:00 a.m. and 9:00 or 10:00 p.m. Following each intake of food, there is a postprandial period of glucose production during the digestive period which does not exceed, as a rule, three hours. The amount of glucose produced during each of the postprandial periods may be controlled to some degree by varying the quantity of carbohydrate in the different feedings. However, regardless of such effort, glucose may enter the blood stream during this postprandial period more rapidly than it can be removed by the insulin available from the pancreas, plus that available from the temporary depot created when protamine-zinc insulin is injected.

This condition creates the necessity of making available during this period an additional supply of quick-acting insulin. Crystalline insulin is employed for this purpose.

With these facts in mind, if quick-acting insulin effect is needed in those patients in whom diet and slow-acting insulin do not produce good control, such quick-acting insulin in the form of crystalline insulin is given before the first meal of the day. Thus, it is helpful during that period, when the effect of the slow-acting protamine-zinc insulin is gathing momentum. Also, during this same period, there is often a lag in the production of endogenous insulin.

We have told briefly of the development of the two present day insulins, the slow acting protamine-zinc insulin and the quick-acting crystalline insulin; we have emphasized the physiologic effect to be expected from each; we have called attention to the necessity for synchronizing the periods of glucose production and exercise with the period of insulin effect. We now present a few important phases of the practical application of these two insulins in the treatment of diabetes mellitus.

First, let us consider the question: "Is insulin required in the immediate treatment of the patient at hand?" Briefly, this is determined by placing the patient upon an observation diet. This diet should produce calories slightly above the basal requirement. If no glycosuria occurs and the blood-sugar levels approximate normal, the diet is increased to a maintenance intake. This diet should allow normal physical activity of the individual while maintaining normal weight and strength, and in children should allow for growth.

If on this diet no glycosuria occurs and blood sugar levels approximate normal, it is evident that the patient is capable of producing sufficient insulin for his needs and no exogenous insulin is necessary in the treatment of his diabetes. However, if glycosuria is present and does not disappear, and glycemia does not approach normal on the first mentioned test diet, namely, the observation diet, insulin administration becomes necessary. Also, if glycosuria disappears while the patient is taking the observation diet but recurs on the maintenance diet with corresponding changes in the blood sugar content, insulin then becomes necessary in the treatment.

Experience with treatment of diabetes enables the clinician to judge from the degree of glycosuria and hyperglycemia present at the first observation the likelihood of favorable response to the observation diet. Therefore, insulin is frequently employed from the beginning. It is possible to judge the need of insulin only for the present period, and the necessity for future use must be determined by continued observation.

Having decided that insulin administration is necessary, protamine-zinc insulin is employed as the fundamental insulin. In mild or moderately severe diabetics, this slow-acting, long-acting insulin alone is sufficient. It stabilizes fluctuations in blood sugar levels and produces a definite sense of well-being in the patient. If the total insulin requirement does not exceed thirty to forty units per day, this one insulin alone may be employed. This is the situation encountered in the average adult diabetic. By testing single specimens of urine at six hour intervals, by determination of the total glycosuria for twenty-four hours, and by occasional blood sugar determinations, the clinician may judge whether or not the diabetes is controlled with protamine-zinc insulin alone while the patient is taking a maintenance diet.

It is not necessary to maintain complete aglycosuria. There is frequently a brief elevation of the blood sugar above the spillover level following each meal, which may be ignored if the total does not exceed in twenty-four hours ten per cent of the carbohydrate intake, and the blood sugar concentration two hours after meals and on fasting approaches normal levels.

Separation of the twenty-four hour output of urine into four periods, one following each of the main meals and one from bedtime to breakfast respectively, and estimation of the sugar lost in the urine during each of these periods may show that it is possible to shift some carbohydrates from the meal preceding a period of glycosuria into a meal preceding a sugar-free period. Thus, most of the total glycosuria may be abolished by this shift.

This shifting of carbohydrate has its limitations, however, and if excessive glycosuria persists during the periods between breakfast and lunch and in the early afternoon, while the night specimens are sugar-free, the indication for the use of quick-acting insulin in addition to protamine-zinc insulin becomes evident. Crystalline insulin is then employed. It is given as a separate injection before breakfast at the same time that the protamine-zinc insulin is administered. The size of the dose is adjusted to that which is necessary to overcome the glycosuria occurring during the first six or eight hours after breakfast. It may be necessary to lower the dose of protamine-zinc insulin when crystalline insulin is added to the regime.

Modifications of this method are in use. Both slow-acting and quick-acting insulin, two units of the former to one unit of the latter, may be employed in the beginning in those patients requiring insulin. Subsequently, the dose of crystalline insulin is decreased and the dose of protamine-zinc insulin is increased an equal number of units until evidence in the urine and in the blood indicates the possibility of maintaining satisfactory control with protamine-zinc insulin alone. The most common ratio of dosage of the two insulins is one unit of crystalline to two units of protamine-zinc insulin, but often a relatively small dose of crystalline greatly improves the control obtained with protamine-zinc insulin alone.

If an attempt is made to overcome glycosura between breakfast and lunch, or during the early afternoon by increasing the dose of protamine-insulin when the patient is sugar-free during the late afternoon and during the night, reactions during the sleeping hours will almost certainly occur. It was the failure to realize this fact during the early period of experience with the slow-acting, long-acting insulin that caused both physician and patient alike to look with disfavor upon its use. It is the *continued* failure or refusal to recognize this limitation in the use of protamine-zinc insulin, or perhaps the resentment against two injections, that still produces unsatisfactory results in handling diabetics who require insulin.

A word about diabetes in children. A marked instability of the sugar mechanism is the rule among juvenile diabetics. This is true in only a small minority of adults. All diabetic children require insulin, usually both slow-acting and quick-acting, and they continue to require it throughout the growth period and probably throughout life.

There is a period of marked improvement in the endogenous insulin production shortly after treatment is instituted in children and also among those adult diabetics who come under treatment soon after the onset. During this period which is transient, often short but occasionally prolonged, there is a great temptation to omit insulin from the regime, if control can be maintained without it. Recent research by Haist, Campbell and Best seems to indicate that this is a wrong practice; that early in the course of diabetes, insulin, plus a somewhat more restricted carbohydrate diet than might later be employed, definitely protects the island cells against further degeneration and allows of maximum recovery.

There is a small group of diabetics who require relatively large doses of insulin. Speaking generally, when the insulin requirement exceeds 60 units of protamine-zinc insulin plus 20 units of crystalline insulin before breakfast, we prefer to improve the control of the diabetes, if necessary, by giving crystalline insulin before supper rather than by increasing the dosage of the two insulins before breakfast.

During the presence of ordinary complications, such as colds and infections, readjustment of the insulin dosage frequently becomes necessary. Additional insulin may be required. This additional insulin is given as quick-acting crystalline insulin at six-hour intervals, if necessary, as indicated by the degree of glycosura or the elevation of the blood sugar. The dose of protamine-zinc insulin is not altered but is retained as a basal dose. After the complication has disappeared, the insulin which has been added may be omitted, and by this method early return to the usual regime is possible.

In preparing a diabetic for a surgical operation or obstetric delivery, we temporarily abandon the use of protamine-zinc insulin until the patient is able to take a reasonable amount of food by mouth without distress. During this period, we employ frequent doses of quick-acting crystalline insulin, the dosage and frequency being determined by urine tests and blood sugar determinations. This simplifies the adjustment of insulin dosage to intravenous glucose administration while this is necessary. In some clinics, protamine-zinc insulin is employed for the major part of the insulin requirement during these periods, but in our experience there has seemed to be no great advantage in this practice. The use of quick-acting insulin alone has given us a greater feeling of certainty regarding sufficient insulin administration and against overdosage. Our procedure during diabetic coma, for similar reasons, is to employ quick-acting insulin alone.

Any discussion of insulin must contain some remarks regarding insulin technic. This is exceedingly important. The injection must enter the space between the subcutaneous fat, and injections must follow a charted sequence so that no site is employed again until four weeks have passed. Our experience has not been satisfactory with those few patients whom we have permitted to mix crystalline and protamine-zinc insulin in the same syringe. We strongly recommend the use of a simplified insulin syringe of one cubic centimeter capacity. The scale has ten subdivisions and bears no numerals. Much confusion arises among diabetics who use syringes graduated in units.

The most encouraging word about diabetes today is that recent research indicates that, if diabetes is diagnosed early and is promptly and strictly treated by an exacting regime, the degenerative process in the island cells may be halted and actual regeneration may occur in some instances. By an exacting regime is meant education of the patient, accurate diet and free use of insulin. Early diagnosis is being promoted by a nationwide program of publicity regarding diabetes.

SUMMARY

Protamine-zinc insulin is the fundamental insulin.

Crystalline insulin is the accessory insulin.

Protamine-zinc insulin is given but once a day before breakfast.

Crystalline insulin may be given as often as necessary, but usually only once daily as a separate injection at the same time that protamine-zinc insulin is injected.

During surgical procedure, obstetric labor and coma, quick-acting insulin alone is in our experience more satisfactory.

Insulin is always necessary in the treatment of diabetes in children and should practically never be omitted even for very brief periods.

Insulin should be used more freely.

The value of education of the patient, accuracy with the diet and greater publicity regarding diabetes should be emphasized.

Early diagnosis and prompt, exacting treatment is the challenge of the hour.

DIABETES: DISTURBANCE IN ENDOCRINE REGULATION OF BLOOD SUGAR*

ENDOCRINE BALANCE IN CARBOHYDRATE METABOLISM

SAMUEL SOSKIN, M.D.**

CHICAGO, ILL.

LECTURE 2 — CARBOHYDRATE UTILIZATION AND CARBOHYDRATE TOLERANCE

In my previous lecture I pointed out that it is impossible to calculate the amount of carbohydrate which is being oxidized, from the respiratory quotient of the whole living organism. This is because we are actually dealing with a composite of many individual R. Q.'s from different tissues and organs. However, two of these R. Q.'s are more important than the rest in determining the total R. Q. of the whole body, namely, the variations in oxygen consumption and carbon dioxide production accompanying the utilization of carbohydrate by the peripheral tissues, and the simultaneous but different variations in gaseous exchange accompanying the formation of carbohydrate from its noncarbohydrate precursors in the liver. The R. Q. in the liverless animal might be a better index of utilization by the peripheral tissues, were it not for the fact that practical considerations make respiratory determinations quite unreliable under these conditions.

Some years ago my coworkers and I undertook a series of experiments on this basis, but using direct chemical estimations of the carbohydrate which disappeared instead of trying to calculate from the indirect respiratory determinations. In this way we were able to determine the actual rates of utilization of carbohydrate by the tissues of normal and diabetic animals. Our method was to remove the liver from our experimental animals and to substitute a constant injection pump with which we delivered known amounts of sugar to the animal. Under anesthesia, at the beginning of each experiment, samples of blood and muscle were taken, from which the total carbohydrate content of the animal could be calculated. The amount of sugar injected during the experiment was known and by repeating our estimations of blood and muscle at the end of the experiment, it was possible to construct a chemical balance sheet indicating the amount of carbohydrate utilized by the peripheral tissues per kilogram body weight per hour. Figure 4 summarizes the results of those experiments.

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*Read before Annual Meeting of Pacific Northwest Medical Association, Spokane, Wash., June 25-28, 1941.

**Director Metabolic and Endocrime Research, Michael Reese Hospital; Assistant Professor of Physioliogy, University of Chicago.

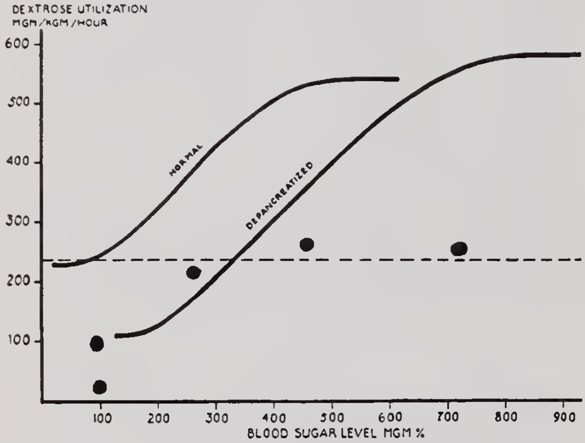

Fig. 4. The relation between the blood sugar level and the rate of sugar utilization in the normal and diabetic organism, calculated from carbohydrate balance experiments in eviscerated normal and depancreatized dogs. The heavy continuous lines are smooth curves drawn through the scatter of points plotted for each group of animals. In both types of animal the rate of sugar utilization varies directly with the blood sugar level. The diabetic animal uses less sugar than the normal at any given blood sugar level. But the lighter broken line, which marks the rate of sugar utilization in normal animals at the normal blood sugar level, crosses the diabetic curve at somewhat over 300 mg. % ; showing that the diabetic animal at the hyperglycemic level which it ordinarily maintains, uses as much sugar as the normal animal at the normal glycemic level.

It may be seen that in the normal animal the rate of utilization of sugar is, within certain limits, proportional to the height of the blood sugar level. But it is also evident that this same relationship holds in the diabetic animal, where insulin is lacking. The difference is that, at any given blood sugar level, the diabetic animal uses less sugar than does the normal animal at the same blood sugar level. Thus, there is a relative difficulty in utilization of sugar by the diabetic animal, and to this extent one might say that the nonutilization theory was justified. However, it has little real significance, for it must be realized that it was only because of our artificial experimental conditions that we could compare the normal and diabetic animals at the same blood sugar levels. Ordinarily, the completely diabetic animal exists at a blood sugar of 300 or more mg. per cent. It may be seen by reference to figure 4 that at these hyperglycemic levels the diabetic animal utilizes as much or more sugar than the normal animal at its normal blood sugar level. In other words, one might say that hyperglycemia in the diabetic animal is a compensatory phenomenon enabling it to continue to use those amounts of sugar which it needs, but which the normal animal with the aid of insulin can utilize at lower blood sugar levels. Since the uncontrolled diabetic animal actually utilizes normal amounts of carbohydrate, and at the same time pours out large amounts of sugar in the urine, it is evident that we must again turn to the overproduction theory to explain the diabetic syndrome.

These experiments also shed considerable light on the mode of action of insulin. It may be seen in figure 4 that the curve of the utilization of sugar for the normal animal is actually an "S" shaped curve with a plateau at the top. In other words, above about 450 mg. per cent there is no further increase in the rate of sugar utilization. If one follows the diabetic curve upwards, it may be seen that this curve also plateaus at about the same level of utilization as does the normal. That is to say, insulin is not essential for utilization of carbohydrate, and if the blood sugar level is high enough the same amounts of carbohydrate are oxidized whether insulin is present or not. We have been able to demonstrate a similar relationship as regards the height of the blood sugar level and the influence of insulin upon the storage of glycogen. In this work it was possible to avoid any complicating factors, such as the influence of other hormones, by observing the deposition of glycogen in the isolated diaphragms of rats in vitro by the Warburg technic. Figure 5 summarizes our findings.

It may be seen that the deposition of glycogen varied with the concentration of sugar in the medium. Comparison of both curves also shows that insulin increased the rate of deposition of glycogen at any given concentration of sugar. But at high sugar concentrations, about the same amounts of glycogen were deposited in the tissue whether insulin was added or not. This similarity in the relationship between the activity of insulin and blood sugar level, both as regards sugar utilization and glycogen storage, indicates that insulin is probably not a specific accelerator of either process. It may be regarded as facilitating entry of sugar from the blood into the tissues, while the fate of that sugar after it enters the tissues probably depends upon other factors. When one considers that the liver is an organ which normally is giving up sugar to the blood while the muscle is constantly taking it in, it will be realized that the single and fundamental action of insulin will be manifested in a different manner in these two tissues. When observed on the muscle, it will be seen to increase the rate of entry of sugar into this tissue; but when observed on the liver, it will be seen to decrease the rate of output of sugar. This action of insulin on the liver again coincides with the overproduction theory of diabetes, since it is apparent that in the absence of insulin the output of sugar from the liver will no longer be restrained.

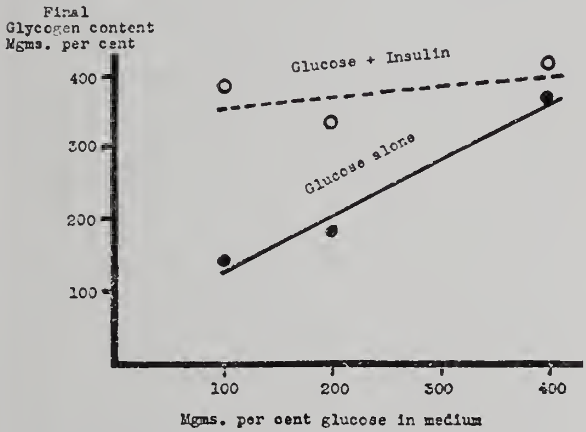

Fig. 5. Relationship between sugar concentration and insulin action as regards deposition of glycogen in isolated muscle in vitro.

Control by insulin of the rate of output of sugar from the liver has been demonstrated directly in an entirely different manner, and in a way which gives a more exact and practical meaning to what has hitherto been loosely called "carbohydrate tolerance." The well-known dextrose tolerance test has been much used, both clinically and experimentally, as a simple and reproducible means of estimating carbohydrate tolerance. It was formerly thought that the normal tolerance curve came about as the result of stimulation of the pancreas by the administered sugar. The pancreas responded by secreting insulin, and the insulin disposed of the sugar by increasing the rates of storage and oxidation of carbohydrate. The abnormal type of curve obtained in the depancreatized animal and in the diabetic human was attributed to a lack of pancreatic response, with consequent inability to utilize the administered sugar at a normal rate.

It occurred to us that it was possible to test these conceptions in a relatively simple manner, and we argued as follows: If we take a depancreatized dog and inject insulin from a constant injection pump at a rate just sufficient to maintain a normal constant blood sugar level, we will have restored that dog to normal in a restricted experimental sense. He will, however, differ from an actually normal animal in that, when a dextrose tolerance test is performed, he will not be able to mobilize additional insulin, but will have to get along on the constant amounts of insulin which he is receiving from his artificial substitute for a pancreas. If the previous concepts are correct, such an animal should yield "diabetic" tolerance curves. We found, to our sorrow, that such experiments were easier to plan than to perform. However, once we had established conditions, under which constant normal blood sugar levels could be maintained in completely depancreatized animals, we found that such animals yielded perfectly normal dextrose tolerance curves. It was evident that, providing sufficient insulin were present to maintain a constant blood sugar level, no more insulin need be secreted in order to obtain a normal dextrose tolerance curve.

Since it appeared that the pancreas was not essential to the reaction, it was natural to turn to the liver. For this purpose we hepatectomized normal dogs, leaving the pancreas intact, and substituted a constant injection of dextrose just sufficient to maintain a normal constant blood sugar level. In other words, this animal was able to mobilize as much insulin as he required, but he could not alter the rate at which sugar was being delivered to his blood from his artificial liver. Such animals invariably yielded markedly diabetic tolerance curves. It was clear that it was the liver that was essential to the reaction which determined the normal dextrose tolerance curve. Further investigation indicated that, when the blood sugar is raised by the administration of sugar, the liver responds to this stimulus by decreasing the amount of sugar which it was formerly supplying to the blood from its own resources.

This homeostatic regulating mechanism for the control of the blood sugar level was directly proven with the cooperation of the group at the institute for Experimental Medicine of the Mayo Foundation. By measuring the rate of blood-flow through the liver of experimental animals with the aid of a thermostromuhr, and by correlating the rate of blood flow with the difference in the sugar content of the blood flowing into and out of the liver, it was possible to calculate the absolute amounts of sugar entering and leaving the liver in milligrams per unit of time. Figure 6 illustrates such an experiment, and shows what happens when the dextrose tolerance test is made. It may be seen that the liver, which was putting out sugar into the blood prior to the administration of the dextrose, ceased to do so almost immediately and started to take in large quantities of sugar. I particularly draw your attention to the period which followed this retention of sugar. At this time the liver was neither taking in nor putting out sugar for a period of about an hour, showing that the inhibition of the output of sugar is a separate phenomenon from its storage. When the period of inhibition was over, the liver again began its usual supply of sugar to the blood.

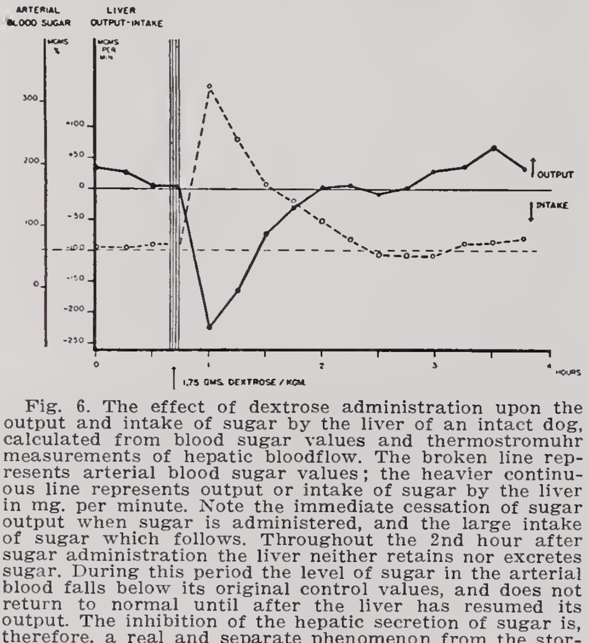

Fig. 6. The effect of dextrose administration upon the output and intake of sugar by the liver of an intact dog, calculated from blood sugar values and thermostromuhr measurements of hepatic bloodflow. The broken line represents arterial blood sugar values; the heavier continuous line represents output or intake of sugar by the liver in mg. per minute. Note the immediate cessation of sugar output when sugar is administered, and the large intake of sugar which follows. Throughout the 2nd hour after sugar administration the liver neither retains nor excretes sugar. During this period the level of sugar in the arterial blood falls below its original control values, and does not return to normal until after the liver has resumed its output. The inhibition of the hepatic secretion of sugar is, therefore, a real and separate phenomenon from the storage of sugar.

This regulating system is analagous to the thermostat-furnace arrangement used in many modern homes. When the temperature of the house rises above the level at which the thermostat has been set, the furnace shuts off until the excess heat has been dissipated. When the temperature falls back to the threshhold of the thermostat, the furnace starts up again. That is exactly what the liver does as far as the blood sugar level is concerned. In this analogy the temperature is equivalent to the blood sugar level and the thermostat-furnace arrangement is represented by the liver. You will note that just as it is the room temperature which operates the thermostat and shuts off the furnace, so it is the blood sugar level which inhibits the output of sugar by the liver.

Where does insulin fit into this picture? Insulin may be compared to the setting of the thermostat. It determines at what level of blood sugar the liver will be inhibited. In the normal animal the amount of insulin constantly supplied by the pancreas is such that the liver is inhibited between the range of 80 to 100 mg. per cent. This, indeed, is what determines the existence of a constant normal blood sugar level. In the absence of insulin the threshhold for the inhibition of the liver is infinitely high.

To revert to our analogy, the adjusting screw which holds the thermostat bar down has been removed and the thermostat is now set at, let us say, a thousand degrees Fahrenheit. For all practical purposes the thermostat might as well have been entirely removed. For, in the first place, the furnace is incapable of producing enough heat to raise the house to one thousand degrees, and so shut itself off. And if the furnace were capable of producing that much heat, the house would burn down before that temperature was reached. What actually happens is that the furnace simply continues to produce heat in an uncontrolled manner at the limit of its capabilities, the house is overheated, and the heat is dissipated to the extent that it can pass through the walls, doors and windows.

Similarly in diabetes, the sugar output of the liver is no longer inhibited, regardless of how high the blood sugar level rises. The result is a hyperglycemia and glycosuria which are only aggravated by the administration of additional sugar. In other words, through this entirely different avenue of approach to the problem of diabetes, we have again reverted to the overproduction theory.

The shift of our point of view from the peripheral tissues to the liver, in diabetes, has a practical value in clinical medicine. When one regards diabetes as a disturbance in regulation of the blood sugar level by the liver, rather than as an impairment in ability of the peripheral tissues to utilize sugar, certain very puzzling aspects of the history of diabetes are explained. As you know, the various dietary treatments which have been advocated for diabetes at one time or another have run the gamut of high protein, high fat and high carbohydrate. In each instance, the proponent of a particular diet has claimed good results while minimizing the benefits to be obtained from other treatments.

As is often the case under these circumstances, the truth of the matter is probably that all these claims were partly right and partly wrong. Since we now see that it is the regulation of the blood sugar which is chiefly at fault in diabetes, it does not much matter what combination of foodstuffs is used, providing they are so arranged as not to put too great a strain on the impaired regulating mechanisms of the diabetic individual. Some years ago Dr. Solomon Strouse and I conducted a series of experiments, in which we treated the same diabetic individuals under identical conditions in the hospital, with various extreme diets. Each patient could be controlled just as well on one diet as on any other. The only evident difference was that there was some difference in the insulin requirements for particular diets. Figure 7 illustrates such an experiment.

Mr. H.	Age—39 yrs. Weight—62.6 kgm. Duration of diabetes—3½ yrs.	High CHO.	High Fat	High Protein
Duration of diet period, days		38	23	43
Diet	Protein, gm.	45	45	150
	Fat, gm.	50	161	100
	Carbohydrate, gm.	290	40	72
	Total calories	1790	1789	1788
	Available glucose, gm.	321	82	169
	Fa:G ratio	0.2:1	2.0:1	0.9:1
Urine	Glucose, gm. per 24 hrs.	2.4	1.2	0.8
	Nitrogen, gm. per 24 hrs.	7.9	6.8	19.3
Blood	Fasting blood sugar, mg. per cent	120	126	154
	Cholesterol, mg. per cent	191	206	192
	CO_2 combining power, vols. per cent	59.6	51.6	53.8
Insulin	Daily dosage, units	30	17	33
	Coefficient	10.6	4.8	5.1
Carbohydrate tolerance, gm. per 24 hrs.		319	81	168

Fig. 7. The figures given for urine and blood constituents are averages for the final week of each period, when the patient was considered to have about reached his maximum tolerance.

It may be seen that the total daily available carbohydrate in these diets varied from 82 grams for the high fat to 321 grams for the high carbohydrate diet. The only difference this made to this particular patient was that he required thirteen more units of insulin on the high carbohydrate diet, than on the high fat diet. At first glance one might say that the high fat diet was, therefore, better. But if one observes the carbohydrate utilized on each diet as compared to the amount of insulin which was required, it will be seen that for each unit of insulin on the high fat diet, the patient retained only 4.8 grams of carbohydrate; while on the high carbohydrate diet, one unit of insulin was able to account for 10.6 grams of carbohydrate. To put it in another way, for the difference of thirteen units of insulin per day, which certainly made no difference in the practical treatment of this case, the patient was able to take 238 additional grams of carbohydrate. If you will recall that blood sugar is the direct stimulus for controlling the excessive sugar output of the liver, while insulin merely determines the level at which the sugar will become effective, the greater efficiency of a given dosage of insulin on a high carbohydrate diet is not surprising.

The common factor in all three diets is the total number of calories ingested in twenty-four hours and the constancy of that intake. Granted these two conditions, it is possible to adjust the insulin dosage so that the patient is well controlled throughout the twenty-four hours on any mixture of foodstuffs. These conditions are the essential ones for control of diabetes, because we are not able to duplicate the insulin secreting action of the pancreas by injecting insulin hypodermically. The amount of insulin which we make available to the liver and muscles of our diabetic patients at different times of the day is determined by the fact that it must be given under the skin, instead of entering via the portal vein as it does normally. Practical considerations also make it necessary to give the insulin in as few as possible doses throughout the day, instead of having it constantly infuse into the circulation as it does normally from the pancreas.

If it were possible in our therapeutic procedure to really imitate the action of the pancreas, no diet whatever would be necessary, except that if the patient ate too much he would gain weight, and if he ate too little he would lose weight. However, in view of the rather arbitrary way in which we must supply the insulin therapeutically, it is necessary to regulate the amount and time of food intake to more or less correspond with the times at which there is enough insulin present to enable the liver to regulate the blood sugar. From this point of view there is little reason to favor one dietary regime over any other, except for the fact that what we call a high carbohydrate diet for a diabetic patient is actually close to a normal diet for a normal individual. It is an easier diet to follow, and, therefore, the patient is more apt to follow instructions. It is better psychologically, in that it does not mark the patient from his neighbors. It supplies a greater amount of readily utilizable energy material, and is a ready source of liver glycogen.

The overproduction theory of diabetes has also led us to an understanding of "insulin resistance." It is well known that the early stages of toxemia (from whatever cause) may be accompanied by hyperglycemia, glycosuria and diminished carbohydrate tolerance, as indicated by the dextrose tolerance test. The response to a given dose of insulin is less than normal. Diabetic patients who were formerly well controlled by a small dose of insulin may, with the advent of toxemia, be poorly controlled with even very large insulin dosages. It is this circumstance to which I am referring as insulin resistance. There have been many theories which attempted to account for this phenomenon, none of which it was possible to prove. We have investigated insulin resistance, using the same technic as that which I described for the study of carbohydrate tolerance.

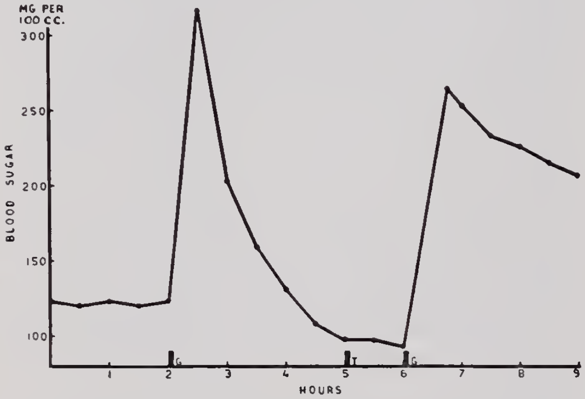

Fig. 8. Results of tests for dextrose tolerance in a depancreatized dog receiving throughout the experiment a constant injection of dextrose plus insulin just sufficient to maintain the blood sugar at a constant level. *G* indicates the administration of the test sugar and *T* the administration of the toxin.

Figure 8 shows an experiment, in which a constant blood sugar level was maintained in a depancreatized animal by continuous injection of insulin from a constant injection pump. A dextrose tolerance test under these circumstances yielded a normal curve. At this point diphtheria toxin was administered, and after a suitable period the dextrose tolerance test was repeated. It may be seen that a markedly diabetic curve was now obtained. It is evident that the toxin could not have decreased carbohydrate tolerance by damaging the pancreas which was not present. In view of what I have said about the influence of insulin on the liver, it was logical to seek for the cause of insulin resistance in that organ.

Our knowledge of the chemical steps involved in the building up and breakdown of liver glycogen has undergone a radical change within recent years. It has long been known that there is some small amount of amylase in the blood and liver. It was formerly thought that hepatic glycogenolysis normally occurred through amylase activity, the glycogen being degraded through dextrins, to maltose to glucose. It is now generally agreed that the blood amylase is either excluded from the liver cell, or that its action is normally inhibited there. Instead, the steps between glycogen and glucose are recognized to be mediated by phosphorylating mechanisms, as is indicated in the righthand column of figure 9.

It is upon these phosphorylations that the insulin presumably exerts its regulating influence, although its exact point of action is still unknown. Insulin has no action upon amylase activity. It occurred to Dr. Taubenhaus and myself that when toxins damage the liver, the normal barrier which protected the liver glycogen from the blood and liver amylase might also be injured. Liver glycogen would then be broken down through this abnormal pathway as well as by phosphorylosis. Since only part of this combined glycogenolysis would then be subject to control by insulin, this would account for so-called insulin resistance. This hypothesis was completely supported by our experimental findings.

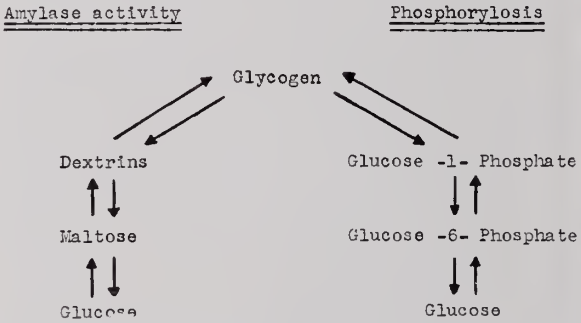

Fig. 9. Discarded (amylase) activity and the new accepted (phosphorylosis) pathways for normal building up and breakdown of liver glycogen.

By working with dogs under nembutal anesthesia, it was possible to remove a piece of liver for control purposes, then inject toxin, and later remove another piece of liver for comparison. We found that, when the normal liver was washed free of blood, little if any amylase activity could be demonstrated in it. Such a liver could break down glycogen by phosphorylosis, and we were able to show that this was the chief pathway of glycogen breakdown by the fact that glycogenolysis did not occur when the phosphates necessary for phosphorylosis were removed from the medium. However, in the liver removed from the intoxicated animals, glycogenolysis proceeded briskly even in the absence of phosphates, and gave rise to polysaccharides characteristic of amylase activity. These polysaccharides never appear in a normal liver, in which the carbohydrate is found either as glycogen or as glucose.

These results not only demonstrated the mechanism by which a diabetic may become resistant to the action of insulin; it also suggested a treatment. While the abnormal amylase activity in the toxic liver cannot be controlled by insulin, amylase resembles other enzymes in that the direction of its activity depends upon concentration of its substrate and of its end-products respectively. Since, in the body, glucose is the end-product of the action of amylase on glycogen, it is possible by increasing the concentration of glucose to slow down or stop the glycogenolytic action of amylase. Thus, an unusually high carbohydrate intake, plus the necessary amount of additional insulin (whatever that amount may be), might be expected to break insulin resistance and bring the patient under control. We have demonstrated this clinically on repeated occasions, and it has often been a lifesaving measure.

One may carry this line of thought further, if one remembers that the damaged liver is poor in glycogen, and that the glycogen stores themselves have been shown to afford protection against toxins to the liver. The treatment of an insulin resistant diabetic by intensive high carbohydrate therapy serves to force some glycogen into the damaged liver and often results, once the insulin resistance has been broken, in an improvement in the carbohydrate tolerance over that which the patient manifested before the insulin resistance appeared.

I trust that I have made it clear that the present knowledge of the physiology of diabetes and of the action of insulin is of more than academic interest. In my next lecture I shall attempt to show how the action of insulin is correlated with the action of other hormones.

(Lecture 3 will appear in next month's issue.)

ADJUSTMENT OF MARITAL PROBLEMS

The old time family doctor used to be very much interested in the adjustment of marital problems, and a continuation of this interest on the part of the physician today would be well worthwhile,. This subject is discussed by Lowell S. Selling, M.D., in the October issue of *The Journal of Michigan State Medical Society,* who states it must be remembered that the married couple are two integrated but individual organisms. The treatment of domestic relations problems lie in three spheres: first, premarital treatment which involves prevention of marital discord by advice and correction of defects before marriage; second, prevention of marital conflict after marriage which is concerned with the correction of emotional maladjustment or physical ailments; third, and the largest sphere, lies in the correction of pathology which results in argument, disagreements, false fantasy life and infantile concepts of marriage. Six general causes of domestic difficulty are pointed out, and suggestions are made for the treatment of each. Some of these can be handled by the general practitioner.

THE COMMON COLD IN CHILDREN*

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In discussing the common cold it may be well first to define the subject of our discussion. According to some definitions, especially by the eye, ear, nose and throat specialists, the common cold is due to an invasion of the upper respiratory tract by a filtrable virus, self-limited to three to five days, and in itself unimportant. Obviously we need not concern ourselves with this condition alone.

To my mind the terms "the common cold" and "catching cold" as used by the laity are most commonly and properly applied to that vast group of infections of the upper respiratory passages which may begin and end with a slight nasal irritation and discharge, or which may include the entire respiratory tract, and ofttimes may lead to the gravest sequelae, as otitis media, mastoiditis, meningitis, bronchitis, pneumonia, etc. In fact, this region, the upper respiratory passages, is the natural atrium for most kinds of pathogenic organisms, and the ultimate consequences of their entrance into the body may be extremely variable and at times most grave.

This group of more or less nonspecific, constantly changing infections of the upper respiratory passages and their sequelae constitute a very large part of general practice. They cause more disability in our patients and greater loss of time from school and work than all other diseases together.

These infections occur sporadically and in epidemics, and are at their worst during the winter and spring; so that the doctor who treats many children may encounter eight or ten periods of sickness in one child during the year. These sicknesses vary in type in different epidemics, but tend to follow the same pattern in the one epidemic. After seeing a few such cases, and recognizing the pattern, it becomes possible to anticipate the symptoms that may appear in later cases in the same epidemic. This tendency to occur in epidemics of varying pattern has been described by Brennemann[1] in a paper which, to those interested in this subject, can be recommended for frequent reading. It is complete and detailed and may be said to be in a class by itself. He uses the term *genius epidemicus* to characterize the pattern of the symptom-complex, and calls attention to its amazing variations. Thus, in one outbreak all the children will have a mildly infected throat and a strong tendency to develop otitis media and perhaps a cough, while in another series of colds the throat may be intensely infected and with laryngitis as a sequel, but without a tendency to develop middle ear infections.

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*Read before the Fifty-second annual meeting of Washington State Medical Association, Seattle, Wash., Aug. 24-27, 1941

[1] Brenneman, J.: Throat Infections in Children. Arch. Pediat. 42; 145-168, March, 1925.

Some years ago during one winter I saw a considerable number of cases of laryngotracheobronchitis of extreme severity, and requiring tracheotomy in six cases. I have seen no such cases before or since that epidemic. Recently in Tacoma we have had an epidemic of sore throats with high fever, vomiting and diarrhea as outstanding symptoms. Many of these patients had frequent liquid movements with a good deal of blood and abdominal pain. It may be noted that, while all these infections varied widely in their manifestations, they began with symptoms which suggested a cold to the parents.

ETIOLOGY

The etiology of these colds is largely speculative. It is very difficult to identify the causative organism in any outbreak. Ordinary throat cultures are useless and often misleading. In one outbreak this past winter, in which all the patients had conjunctivitis, rhinitis and pharyngitis of varying severity, cultures were taken by a laboratory from the eyes, nose and throat of ten patients, and the results tabulated. Although most of the organisms commonly found in the nose and throat were present one or more times in the various patients, in no two were they grouped alike, and each was found to have two or three different organisms. Which of these or whether any of these organisms were responsible for the symptoms could not be determined.

Probably the streptococcus and pneumococcus, with their multitude of strains and types, the staphylococcus, the influenza bacillus and a host of others, in their turn and singly or severally, are responsible for these varying symptoms. No doubt the virus group plays a part, but the theory that all colds are initiated by a virus, and that other organisms are merely secondary invaders is, I believe, unproven and at the most is only of academic interest.

A considerable percentage of colds are due primarily to or are influenced by an allergic tendency. An individual may be sensitive to certain foods, to certain substances which reach the nasal mucosa with the air he breathes, and also to the bacterial flora in his nose and throat. To make matters more complex the allergic tendency may not be manifested except when an actual bacterial infection tips the scales and adds such symptoms as fever and a sore throat to confuse the picture. When an allergic rhinitis is suspected, a smear from the nasal mucosa should be examined for eosinophil cells.

SYMPTOMS

Symptoms may vary from a mild and transient nasal discharge, with sneezing and some general discomfort, to a severe and sudden onset, with high fever, prostration and chills. In babies a convulsion may be the first disturbance noticed by the mother. Absence of fever, in the presence of symptoms of a cold, speaks for an allergic condition.

The fever in these upper respiratory infections is variable. It may be very high and last but a few days, or it may continue as a slight elevation of temperature for a relatively long time, and occasionally it outlasts all other symptoms or evidence of sickness. These slight fevers, persisting for a few weeks, are disturbing to the parents and are often embarrassing to the doctor. When other unfavorable signs are absent and the child feels perfectly well, I would like to urge that we do not go too far afield searching for a cause of the fever. Children are thus often subjected to painful and disagreeable procedures which are wholly unwarranted and unnecessary. If the child feels well and examination shows no other evidence of trouble, a little watchful waiting may be all that is needed.

There is one prominent symptom occurring as a sequel to throat infections in children that needs to be mentioned. I refer to abdominal pain. Brennemann first described the pain and its relationship to upper respiratory infections. I cannot do much more than to mention the symptom here, but I wish to emphasize its importance. The pain is usually at the umbilicus, and its character often suggests that of appendicitis. It is very common and difficult to explain to anxious parents. It is believed to be due to mesenteric adenopathy, and is definitely secondary to a sore throat. Recognition of the presence of a sort throat may save an operation. In general, it may be said that the pain is apt to be more severe than that of appendicitis, while localized tenderness is much less severe or is entirely absent; but at times the symptoms are so like those of an acute appendicitis that even the most experienced surgeon is baffled and must take a look into the abdomen to make sure.

DIAGNOSIS

Diagnosis of these upper respiratory infections must rest upon a careful examination. It is not sufficiently recognized that children, even older ones, are wholly unaware of the presence of a sort throat; so we must look carefully, with a good light. Middle ear infections may occur early in the course of the sickness, especially in babies; it is, therefore, important to examine the ears. No doctor who is not equipped to look at the ear drums should take care of children. Enlarged cervical glands, bronchial cough or laryngitis may complete the picture.

Sometimes, indeed very often, in babies and young children, gastrointestinal symptoms predominate, and sometimes this is considered to be the primary condition and the real cause is missed. It is well to examine the urine, especially near the termination of an illness due to a sort throat. Some epidemics have postinfectious nephritis as a frequent sequel.

TREATMENT

The greatest need is an effective prophylaxis. I know of none that is satisfactory. Every doctor who takes care of children is familiar with the frequent and insistent demand from distracted parents for "something that will keep this child from having colds all the time"; so we remove tonsils, give cold shots and vitamin pills. All of these procedures are sometimes rather difficult to defend.

I believe tonsils should be removed only for a definite and specific reason, and that no doctor has a right merely to give a casual look at a throat and pronounce a verdict for a tonsillectomy. It is necessary to know what the tonsils are doing to the child, and the mother may know more about this than does the doctor. If the adenoids are obstructing the airway, if middle ear infection is recurrent or chronic, if it seems probable that the condition of the tonsils interferes with growth, any one or more of these three conditions may serve as indication for tonsillectomy. I believe there are rarely other indications. Tonsillectomy will not cure a cough, but is likely to make it worse, and unfortunately the operation will not protect children against these frequently recurring colds; and, finally, I can not forget the fine little boy who died as an immediate and direct consequence of a tonsil operation that I had sanctioned. As an offset, I am unable to believe that I have saved any lives by the operation.

To the doctor who likes to give cold shots, I can only advise that, for his own piece of mind, he had better not examine the literature on the subject too carefully.

For the acute cold, rest in bed in a comfortably warm atmosphere is of first importance. Aspirin is the best drug to relieve discomfort, and is best administered to a young child in orange syrup. Codeine is often necessary for the cough.

The one bright note in this rather discouraging recital is the advent of chemotherapy. Those of us who struggled in past years, often unsuccessfully, with complications of these colds, never dreamed we would some day have a medicine which, given by mouth, would repel the most deadly bacterial invader. Now we have such medicines, and they are being constantly improved. We should use them early and boldly when needed. It is no credit to the doctor to wait until the child has a mastoiditis before beginning adequate medication, nor through fear of his weapon to use it inadequately.

I would like here again to refer to Brennemann's paper. This is a quotation: "The point that I want most to emphasize is the fact that any and every throat infection that we see may initiate a series of pathologic changes that may invade almost any part of the body, and that it is of value to adopt this viewpoint in practice." Brennemann knew nothing of the sulfonamides when he wrote this, but I think it may well apply to their use. Shall we give a sulfonamide to every child with a sore throat? Probably not, but remembering the *genius epidemicus,* we should be ready to use it promptly, if it seems likely that one of the serious complications such as otitis media may supervene.

In conclusion, it may have been noted that I have not used the terms "strep throat" nor "the flu" in this paper. I admit these expressions are a great help in satisfying the parents of our patients, but they are bad for us. When we are called to see a sick child we need more accurate and more honest thinking than these terms imply.

DIAGNOSIS AND TREATMENT OF GOUT*

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In a delightful article on gout by Sir Thomas Allbutt, he claims that this disease has perhaps the longest and most worshipful of pedigrees. Gout is an interesting disease, because no one is ashamed to have it. Indeed, at one time it was so fashionable a malady that many claimed to be its victims, when they were really suffering from some other form of joint disease. Gout is described by Hippocrates as the "unwalkable disease." It was well recognized during the Roman Empire, but it was not until the time of Sydenham that gout became well differentiated from other arthritic affections. It is to Garrod, however, that we owe much of our knowledge of the chemistry of gout.

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*Read before Annual Meeting of Pacific Northwest Medical Association, Spokane, Wash., June 25-28, 1941.

During recent years the remark has often been made that gout is a rare disease, indeed almost a curiosity. Such, however, is not the case. Rheumatologists all agree that gout, particularly in private practice, is a fairly common disease. At Hench's clinic approximately 5 per cent of his arthritic patients were classified as gout. Many famous men have been the victims of gout, among them James Russell Lowell, Alexander the Great, Louis XIV, William Harvey, Widal and Sydenham. Among statesmen, Fox, the two Pitts and Benjamin Franklin were victims of gout.

PHYSIOLOGY

Nearly one hundred years ago Garrod discovered an increase of uric acid in the blood of gouty patients. This uric acid is derived from two sources: an exogenous, chiefly the nucleoproteins of the food, and an endogenous, chiefly the breakdown of the nuclear elements of tissue cells. The exogenous supply of uric acid is derived chiefly from food which contains a high percentage of purins, and these exist in high percentages in red meats. However, poor man's gout has long been recognized as a definite entity.

It is certain that many patients develop gout who have been unable to purchase red meats or other forms of food rich in purins. Hench says that the high level of uric acid in the blood may be looked upon as the result of (1) excess formation of uric acid, (2) deficient excretion of urates and (3) diminished destruction of urates in the body. It is a fact, however, that many patients with typical gout do not show a high uric acid, and this is particularly true of the acute cases. It must be admitted that, though most students of gout believe that uric acid has an important part to play in the disease, we are still a long way from understanding the real chemistry and physiology of this condition.

At least ninety-five per cent of gouty patients are males. There are many physicians of wide experience who have never seen a case of gout in a female. It has been suggested that this apparent immunity of the female is due to the menstrual cycle by which a certain amount of urates is excreted from the body every twenty-eight days. However, this would not explain the absence of gout in elderly women.

SYMPTOMS

Symptoms of gout usually make their appearance in patients past the age of 35, though occasionally it is seen in quite young people. The disease is much more apt to become persistent and chronic when it develops early in life. Heredity is also an important factor, 10 to 80 per cent of patients giving a history of gout in some other member of the family. Gout, or gouty arthritis, is usually divided into two stages, acute and chronic. Let us, therefore, discuss the disease under these two headings.

Acute gout, or acute gouty arthritis (podagra), is usually easy enough to diagnose, provided the physician keeps the possibility of gout always in mind. Acute gouty arthritis usually occurs suddenly, lasts a week or ten days, and then clears up completely. The joints chiefly affected are the great toe, ankle, wrist or finger. The acute attack usually comes on at night, with severe pain and swelling in the affected joint. The patient often gives a history of preceding trauma, such as excessive walking or tennis the day before or, if the wrist is affected, the history of indulging in some active sport, such as baseball or handball. The skin over the affected joint takes on a deep purplish red color and the veins are distended. Pain is usually quite severe, indeed sometimes so intense that the weight of the bedclothes adds to the patient's distress. These early acute attacks usually affect only one joint and are afebrile. After a few days the pain and swelling sometimes disappear entirely, and the patient may have no more trouble for several months or even several years.

These acute attacks of gouty arthritis are often accompanied by a normal or only slightly elevated uric acid, and usually the patient presents no tophi in the ears or elsewhere. Later on, as the attacks become more frequent, the incidence of high blood uric acid is increased and tophi may or may not be present.

Laboratory findings in acute gout are usually insignificant. Often the roentgenogram may present nothing of diagnostic significance. The blood uric acid may be elevated to 4 or 5 mg. per cent. On the other hand, some cases show a persistent normal level. The urine is usually normal and the blood count shows nothing noteworthy.

Chronic Gouty Arthritis. Five to forty years after the first attack of acute gouty arthritis, an important change may occur. The joints no longer recover completely. Some stiffness, pain and deformity remain and thus signalize the onset of chronic gouty arthritis. At first the chronically affected joints are subject to acute exacerbations. Finally, however, these exacerbations cease and the joints take on the character of a really chronic disease. The life history of gout undoubtedly follows this pattern in some cases. However, in my experience, the development of chronic tophaceous gout in a private patient is a rather unusual experience. Many of these patients pass from middle into old age and still continue to have their acute attacks once or twice a year or even more frequently, but without any very strong tendency toward development of the chronic gouty arthritis.

Chronic gouty arthritis, in contrast to acute gout, is nearly always polyarticular. Joints of the hands and feet are swollen and deformed. Subcutaneous tophi are found in the ears and at various points in the extremities. Swelling of the olecranon and prepatellar bursae is common. On section, these swollen, chronically inflamed joints are found to be the seat of true arthritis. Cultures, however, are sterile. There is no infection present, the chronic inflammatory tissue resulting entirely from the irritating deposits of urates in the tissue.

Many of these patients with chronic gout develop chronic glomerular nephritis. Degenerative vascular disease may also occur in late gout and cause death by coronary or cerebral vascular accidents. A certain percentage of patients develop renal colic from urate gravel or stones, and unless these cases are properly handled, secondary pyelonephrosis may develop.

LABORATORY FINDINGS IN CHRONIC GOUT

The blood uric acid is nearly always elevated above 3 mg. and may reach a level of 8 to 10 mg. per cent. The average is 6 or 7 mg. per cent. Roentgenograms of joints affected by chronic tophaceous gout are very apt to show characteristic erosions or punched-out areas, but these are not entirely pathognomonic, as some patients with rheumatoid arthritis will show similar lesions.

TREATMENT

Hench says that the most important point in treatment of gout is its recognition, and that once this is done, the purely articular phases of the disease will respond more promptly. In great measure this is true, though I must confess I have always found that chronic tophaceous gout is extremely resistent to treatment.

Acute Gout. The acute attack of gout can often be shortened by taking a brisk cathartic, and 5-10 doses of colchicin, 1/100 of a grain by mouth every two or three hours. Colchicin is usually continued until the patient develops symptoms of intestinal irritation (colic and diarrhea). In addition to the colchicin, many like to administer sodium salicylate or aspirin three times daily, or cinchopen 7½ grains three times daily, all of which have the capacity to accelerate excretion of uric acid and thus reduce the blood uric acid level. There are some who still prefer wine or tincture of colchicum to colchicin, but the latter is preferable. The diet for acute gout should be low in purins and fats and rich in proteins, such as milk, eggs and cheese. During the acute attack the patient should take no alcohol of any kind.

Chronic Gout. Once the attack of acute gout is cleared up, the physician and patient must cooperate in a plan to prevent recurrences. If this is not done, there is always danger of the acute attacks becoming more frequent and passing into the form of chronic gouty arthritis. Complete prevention of acute attacks is not always easy, but if acute episodes can be made infrequent, danger of the chronic disease will be greatly minimized.

Treatment of asymptomatic gout is largely concerned with prevention of high blood uric acid. This desideratum can sometimes be achieved by diet alone. In more difficult cases, however, a low purin diet must be supplemented by admintstration of drugs which will hasten the elimination of urates from the body, for in spite of our uncertainty concerning the exact etiology of acute attacks of gout, there is no doubt concerning the importance of a high blood uric acid in production of chronic gouty arthritis, uric acid stones and gouty nephritis.

Low Purin Diet. The severity of the diet will depend on the patient and the severity of his gout. For example, in some patients it is sufficient simply to place them on a low purin diet. In others the diet must be entirely free of purins on at least two days a week. Foods which contain a very large amount of purin bodies should be absolutely forbidden. They consist of liver, kidneys, sweetbreads, brains, sardines, meat extracts and certain gravies. Second group of foods contains a large amount of purins, 75 to 150 mg. in 100 gm., and should be allowed not more than once a week if at all. This list contains such common foods as red meat, game of various kinds, bacon, meat soups, lamb, shellfish, codfish and halibut.

The third group contains only a moderate amount of purin bodies up to 75 mg. in 100 Gm. In this list come most of the meats and fish not mentioned above, as well as asparagus, cauliflower, beans, peas, spinach, salmon, shad, lobster and chicken. Whole wheat bread and whole grain bread and cereals also fall in this group. One article of food from this group can be taken four to five days a week.

Finally comes a large list of foods which contain little or no purin and can be eaten at will. This includes practically all soft beverages, such as coffee, tea and milk, butter and eggs, cheese, dried cereals and most of the vegetables and fruits. Many physicians have an impression that caviar and shad roe should be denied gouty patients, but neither of them contain an appreciable amount of purin, and can, therefore, be allowed, if you can get them!

33 East 61st Street

ABDOMINAL PREGNANCY

REPORT OF TWO CASES

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It is well recognized that abdominal pregnancy, whether primary or secondary, is one of the rarer complications of obstetrics. It has been estimated that this occurs about once in 20,000 pregnancies. In 1933, Cornell and Lash[1] published an excellent report of 236 cases collected from the literature, to which Mason,[2] in 1940, added 69. Generally, it is conceded that the maternal mortality is high, approaching 40 per cent, with a fetal mortality of approximately 50 per cent, when full term or viable.

Although case reports of primary abdominal pregnancy have appeared in the literature sporadically, it appears that the majority of the cases are not primary implantations of the ovum in the peritoneal cavity, but are secondary to such conditions as tubal abortion or ruptured tubal pregnancy. Abdominal pregnancy may occur, if the fertilized ovum escapes into the peritoneal cavity and the placenta maintains either in part or totally its original tubal attachment. A reimplantation of a viable ovum with its completely separated placenta, after traveling through the peritoneal cavity, concludes that the ovum will survive until the chorionic villi have created a new connection with the maternal peritoneal tissue. This, affirms Latzko,[3] is, a priori, unbelievable.

In pregnancies occurring in the tubal ampulla, the implantation may be near enough the ostium abdominale to allow the embryo to grow into the abdominal cavity without restraint and develop as an abdominal pregnancy. Should the tube rupture between the leaves of the broad ligament and the embryo survive, it may develop as an abdominal pregnancy, although it is definitely extraperitoneal. Or, more logically, the ovum may break through the broad ligament and develop within the peritoneal cavity, the placenta still retaining its intraligamentous attachment. Conceivably, again, a primary ovarian pregnancy may rupture, the placenta remaining attached to the ovary, and develop as an abdominal pregnancy.[4]

A correct preoperative diagnosis is made in less than one-half the cases, the condition usually being confused with pelvic tumor such as uterine fibroid or ovarian cyst. This would lead one to emphasize the symptoms which characterize the condition.

There is usually a history of tubal abortion or rupture with its attendant cataclysmic picture. Of primary emphasis is the exquisite pain to palpation of the abdomen or to rectal or vaginal manipulation that these women evidence. This was most apparent in the two cases reported here. In 82 cases reported by Scheffey[5] et al, the menstrual history was normal in 80 per cent. The patient is abnormally uncomfortable and disabled, the disability in one of my cases amounting to invalidism. There are many signs of peritoneal irritation as the pregnancy progresses, with soreness, gastric and intestinal disturbances, and bladder irregularities. The heart sounds of the fetus can be heard with much more clarity and ease than is normally possible.

On vaginal examination, the cervix is high and the uterus anterior, the placenta occasionally being palpable as a hard resistant mass in the cul-de-sac. The cervix has usually been described as being firm, resembling in appearance and consistency that of the nonpregnant state. The Friedman test and lipiodal injection of the uterus as advocated by Greenhill[6] are valuable diagnostic aids.

The proper time to operate after the diagnosis has been made is debatable, and many opinions appear in the literature. It would appear that with the high incidence in maternal as well as fetal mortality that ensues, should the pregnancy go to full term, the condition should be handled with caution so far as delay in surgery is concerned. Certainly, should the diagnosis be made before the fetus is viable, and if no religious precepts interfere, surgery should be done as soon as possible. If the pregnancy is beyond the seventh month, hospitalization, typing for transfusion and careful surgical and ob-

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1. Cornell, E. L. and Lash, A. F.: Abdominal Pregnancy, Internat. Abst. Surg. 98:104, Aug., 1933.

2. Mason, L. W.: Advanced Abdominal Pregnancy. Am. J. Ob. & Gyn. 756:762, May, 1940.

3. Lull, C. B.: Abdominal Pregnancy. Am. J. Ob. & Gyn. 194:202, Aug., 1940.

5. Nelson Loose Leaf Surgery: Page 538, Volume 7.

5. Scheffey, L. C., Morgan, T. R. and Stimson, C. M.: An analysis of a series of 82 cases of ectopic pregnancy. Am. J. Ob. & Gyn. 24:103-115, 1932.

6. Greenhill, J. P.: Hysterography as an Aid in the Diagnosis of Abdominal Pregnancy. J. A. M. A., Vol. 106: 606-608, Feb. 22, 1936.

stetric judgment are warranted before the case is allowed to go on to term.

There is much difference of opinion as regards the management of the placenta when approached surgically. There are three methods recommended: (1) complete separation and removal, (2) marsupialization or partial closure and drainage, (3) leaving the placenta in situ with or without drainage. In the series of 236 cases reported by Cornell and Lash, when the placenta was removed in toto, the maternal mortality was half the percentage attained when the placenta was marsupialized or left in situ. This is attested to, also, by Mason who recommends complete removal of the placenta, when it is so situated that it can be easily removed without unnecessary hemorrhage or damage to vital structures.

It is definitely a mistake, however, to persist in removal of a placenta where its attachments are inaccessible or associated with intestine or liver. Should this be the case, most authorities concur that the placenta should be left in situ without drainage, absorption taking place completely in a few weeks. Although hemorrhage may occur and prove fatal as the placenta separates or disintegrates, it is safer to leave the placenta alone as this accident is rare. Cornell and Lash recommend drainage as packing for hemorrhage only when necessary. If there is infection, the method of choice is marsupialization, which Miller[7] states gives a very good result, aside from the fact that the drainage is prolonged.

The following two cases I had the privilege of seeing seem worthy of record.

Case 1. E. M., aged 35, was first seen in the outpatient clinic of King County Hospital in Seattle on October 18, 1938. She was a para (v), gravida (vii), having had one spontaneous abortion in 1924. Her previous obstetric history was normal. Her deliveries were full term and uneventful, the last one occurring twelve years previously. She dated her last menstrual period April 12, 1938, this being her first visit to the clinic.

There was no history of pertinent familial disease. The patient had had a nephropexy done in 1937, and had had poliomyelitis at the age of two years. She complained that during her pregnancy she had had "spells" characterized by intense perspiration, excessive weariness and aching all over. These attacks were usually associated with moderate cramping pain in the lower abdomen. She stated that she had been much more uncomfortable with this than with any of her previous pregnancies, having had much flatulence and constipation. Nocturia and dysuria were frequent concomitants. Although her last menstrual period was in April, she had had gushes of blood from the vagina three to four times a day up to the present time, this being more noticeable after she had done a heavy washing.

Physical examination revealed a stolid, obese woman. Other than for badly carious teeth she semed in good condition. Blood pressure was 120/58. Examination of the abdomen revealed the usual swelling attendant on a six months gestation with left occiput presentation. Palpation seemed unusually to distress the patient and she pleaded with me to complete the examination. The fetal heart sounds were regular, 140, and unusually loud and distinct.

Bimanual examination was made, the cervix being found high and anterior. The os could not be seen by specular examination, and the fundus uteri was not demonstrable. There were no Hegar or Chadwick signs. Upon palpating the cul-de-sac, a hard firm nodular mass was felt about the size of a grapefruit, seemingly extending high in the pelvis and not connected with the uterus. I manipulated the mass quite considerably in attempting to discover what it was, and the patient immediately complained of severe pain. She was lowered from the lithotomy position, and rapidly went into shock, with marked diaphoresis, pallor and rapid pulse. The blood pressure fell to 80/50 and the abdomen was rigid over all.

She was admitted immediately to the hospital. Shortly after admission, Cullen's sign was demonstrable. Shifting dullness became evident. A flat plate of the abdomen showed the fetus lying in the pelvis with no direct evidence of a ruptured viscus. On admission her hemoglobin was 64 per cent with 3,100,000 r.b.c., 18,000 w.b.c and a 90 per cent polymorphonuclear neutrophile count.

A diagnosis of abruptio placenta or of ruptured uterus was made, and the patient taken to surgery. Operation, done by H. V. Bories, was described as follows:

"On opening the abdomen, a considerable amount of free blood was found. The uterus was two times its normal size. Low in the cul-de-sac was found a fetus of six months gestation. The placenta was attached to left broad ligament, omentum and sigmoid. The placenta was removed as much as possible. Owing to extensive bleeding, the placenta seemed loosened from its attachments. All bleeding points were ligated and one small penrose drain was inserted at the lower end of the incision. An intravenous of 5 per cent glucose in normal saline was given while the patient was on the operating table, a transfusion following."

The patient's postoperative course was hectic for the first forty-eight hours following surgery. She was given two additional transfusions of 600 and 700 cc. of whole blood. Convalescence occurred noneventfully following this and she was discharged on November 3, fifteen days following surgery.

Case 2. A. H., aged 33, was admitted to Kittitas County Hospital in Ellensburg on April 9, 1941. She complained of severe lower abdominal pain, most marked on the right side which had been present for three days. The pain was cramping in character and intensely agonizing spasmodically. Up to the onset of the pain she had been feeling fairly well, other than for a moderate amount of weakness and lethargy.

Her last menstrual period began March 20, the menses having been regular every twenty-eight days up to that time. Duration of the last bleeding was ten days, being very heavy and associated with much pain during the first five days. On close questioning she stated that on January 20 she had had an attack of sudden pain, at first experienced in her right side which soon spread to involve the entire lower abdomen, coming suddenly while she was lying in bed. No doctor was called because the patient was living several miles from town. Hot water bottles were applied, and after two to three days in bed she felt well enough to sit up. The pain persisted to a lessening degree from its inception on that date for four or five days and then left her. She felt very tired and weak for two weeks following this.

The patient had had five pregnancies and one miscarriage.

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[7] Miller, C. J.: Abdominal pregnancy after Caeserian Section for Eclampsia. Surg. Clinics North America 10: 733-740, 1930.

The last pregnancy occurred thirteen years previously, no contraceptive measures having been used since that time. There was no history of pertinent familial disease or of venereal disease. She had always had some pain at her menses and pain of a chronic nature in her left side which occurred periodically midmenstrually. After her last child was born she developed mumps, infection involving her left ovary at that time according to her doctor.

The patient presented a cachectic, exsanguinated picture on admission. She weighed 100 pounds and was 5 feet 4 inches in height. Examination of the head, neck and chest was essentially normal save for pulse of 120 and hemic murmur at the cardiac apex. Blood pressure was 76/44.

A hard, nodular mass was felt in right lower abdomen, the patient screaming with pain when this was palpated. Vaginal examination was productive of so much pain that it could not be done the evening of admission. There was definite rigidity over right lower quadrant. Temperature was 99°, hemoglobin 40 per cent with 2,200,000 r.b.c. White blood count was 6,000 with 78 per cent p.m.n. Urine was negative for sugar, albumin and casts.

Differential diagnosis was made of (1) ruptured appendix with formation of a circumscribed abscess, (2) ovarian carcinoma. She was typed for transfusion and ice packs applied locally in Fowler's position. Sulfathiazole in large doses was begun.

The next morning, under penthothal anesthesia, a complete vaginal and abdominal examination was made. The mass palpated in the abdomen was as large as a small grapefruit and, felt bimanually, it occupied the entire cul-de-sac. The uterus could be felt high and anterior with a thick, tight, hard cervix. The right adnexa seemed incorporated in the mass, the left adnexal area being palpably normal. Upon ausculation over the abdominal mass a fetal heart could be heard very clearly. A diagnosis of abdominal pregnancy was made.

During the next two weeks the patient was given six transfusions, the hemoglobin finally being built up to 68 per cent with 3,500,000 r.b.c. While under observation in the hospital it was noted that her breasts began to enlarge. She was very uncomfortable, pain in her abdomen continuing unabatedly, necessitating morphine for relief. She was continuously nauseated, refusing all solid food, and complaining when the least pressure, even of blankets, was placed on her abdomen. The mass in her abdomen increased gradually in size.

On April 24 she was operated upon, the abdomen being opened by a lower midline incision. The fetus was the size of a five months' pregnancy. The placenta was attached to the pelvic peritoneum almost completely with the exception of one small attachment to a loop of ileum. Right tube and ovary were incorporated in the mass so that they could not be delineated. Left adnexa were normal. Uterus was two times its normal size. The entire right adnexal mass was removed, the placenta being easily shelled out from the peritoneal attachments. Bleeding encountered was soon controlled by hot packs and ties as needed. The incision was closed in layers, a small penrose drain being inserted to the cul-de-sac from the lower margin of the wound.

Three transfusions were given following surgery and she improved rapidly and uneventfully, being discharged on May 16 with a small amount of serous drainage still appearing from the wound.

These two cases represent an addition to existing literature on this interesting subject. In both cases the placenta was removed with the fetus, and penrose drains inserted. Surgically speaking, both patients made an excellent recovery, and we affirm the conclusions of Cornell and Lash that the placenta be removed completely, if not too intimately attached to vital structures.

It is to be expected that the rarity of secondary abdominal pregnancy will be increased by education of the lay public to request earlier and more adequate prenatal care. Subsequently, early recognition of ectopic pregnancy and its treatment surgically will obviate tubal rupture or abortion and its possible sequelae.

MICROSLIDE DIAGNOSIS OF ATYPICAL GONORRHEA*

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Practical medicine, which efficiently serves in the emergency to keep the accident of the individual from being compounded and a community misfortune, too often meets not all the requirements of scientific or political medicine. Such a vehicle is the microslide diagnosis of atypical gonorrhea which, because of practicality, still serves in the management of probably 90 per cent of gonorrhea. The United States Public Health Service however, maintains that negative cultures are the only reliable criterion for discharging a gonorrhea patient as being cured. The private physician finds that, if he is careful in history taking and in studying clinical and laboratory findings, slides satisfactorily serve his needs under ordinary conditions.

The family doctor knows that patients consult him also as a friend who would guide them in all matters pertaining to the varied ramifications of their affliction. Hence, he welcomes anything which enables him to reduce diagnostic inaccuracies to the minimum and to accomplish most in the shortest possible time at the minimum of expense, commensurate with good medicine.

STUDYING THE SLIDE

Figure 1 depicts important elements found on the slide. While gram-negative intracellular diplococci are necessary for a positive diagnosis, the other elements and their relationship to history and clinical findings are most important. Such germs found extracellular, on or between the epithelial cells, indicate gonorrhea, yet one must withhold opinion until typical groups are found. It is only after becoming detached that the gonococci are phagocytosed, then possibly to continue to grow within the pus cell. Single organisms or single pairs upon epithelial cells, or within phagocytes, likewise require further study.

Gram-positive organisms conforming in relationship to other elements, and size and shape, are common enough in urethral smears to be classed as almost normal inhabitants of the meatal region. Germs staining irregularly and atypical as to shape, with insignificant pus cells, suggest either no gonorrhea or improper taking of the spread. Under extraordinary conditions gonococci may be found in the mucus, but such germs should always be looked upon with suspicion, since the gonococcus grows best in the juices surrounding protective cells. Mucus is very poor gonococcal soil, having the wrong pH.

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*Read before Fifty-second Annual Meeting of Washington State Medical Association, Seattle, Wash., Aug. 24-27, 1941.

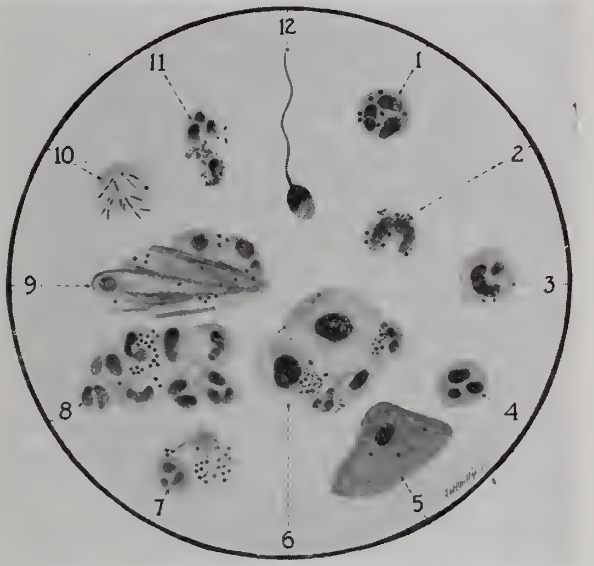

Fig. 1. Common elements seen in a microfield of gonorrheal pus:
1. A young phagocyte.
2. An old phagocyte; cytoplasm stained poorly.
3. May be young gonococci, other bacteria or debris upon a phagocyte.
4. Young pus cell; nuclei and cytoplasm clear and distinct.
5. Epithelial cell carrying what may be gonococci or saprophytes.
6. Desquamated epithelial cells with gonococci both upon them and within a phagocyte.
7. Infection being overcome and gonococci degenerating, evidenced by extracellular germs of varied sizes, shapes and depths of staining.
8. Virulent gonococci overwhelming all and growing in the serous discharge.
9. Old gonococci that have become adapted to an unhospitable soil (mucus).
10. Saprophytic germs, evidenced by absence of pus.
11. Mildly irritating saprophytes. May have destroyed the gonococci.
12. A spermatazoon. Often only the detached head is seen.

Any diplococcus resembling the gonococcus, found in unusual locations or under unusual conditions, demands repitition of the slide-taking and withholding of an opinion until either typical phagocytes are found or, after a reasonable time and repeated reexamination, none can be found.

FOCAL INFECTION AREAS

Figure 2 depicts favorite foci for quiescent gonorrhea in the male. Small periurethral ducts lateral to the meatus, ducts just within the urethra, particularly in the superior surface and the Tyson's glands opening externally in the frenal area, are much neglected infection foci.

Figure 3 depicts similar foci in the female. Woman's periurethral ducts, sometimes called the female prostate, and the glands in the floor of the urethra, Skene's glands, if infected, are usually evidenced by a collarlike swelling, a semieversion of the meatus. This may continue into the quiescent stage.

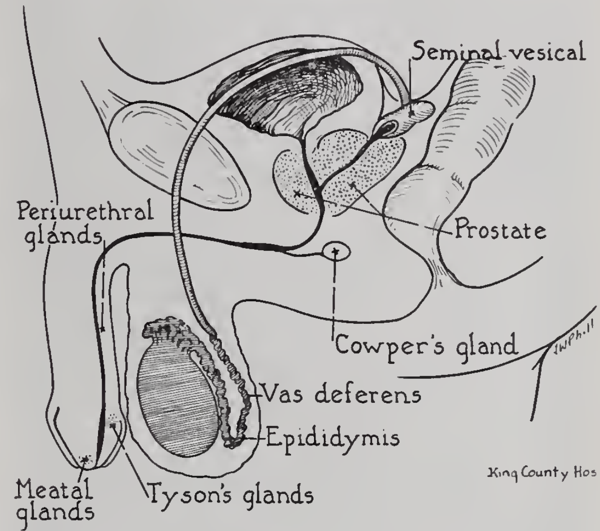

Fig. 2. Common foci of infection in male genitourinary system.

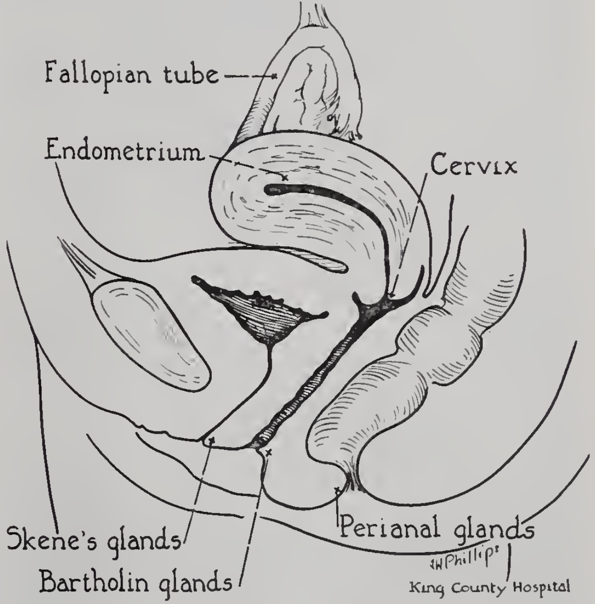

Fig. 3. Common foci of infection in female genitourinary system.

The meatal speculum in figure 4 serves to hold her meatal lips open for inspection and slide taking from the urethral floor. Woman's counterparts to man's adnexal urethral glands are found anywhere from the fourchette to the clitoris. The counterpart of Tyson's gland is to the side of and behind the clitoris.

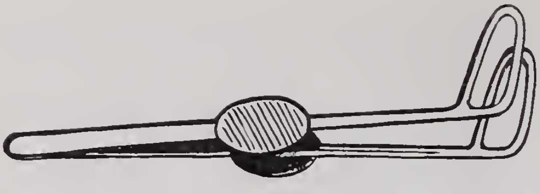

Fig. 4. Meatal speculum useful in securing spreads from Skene's glands.

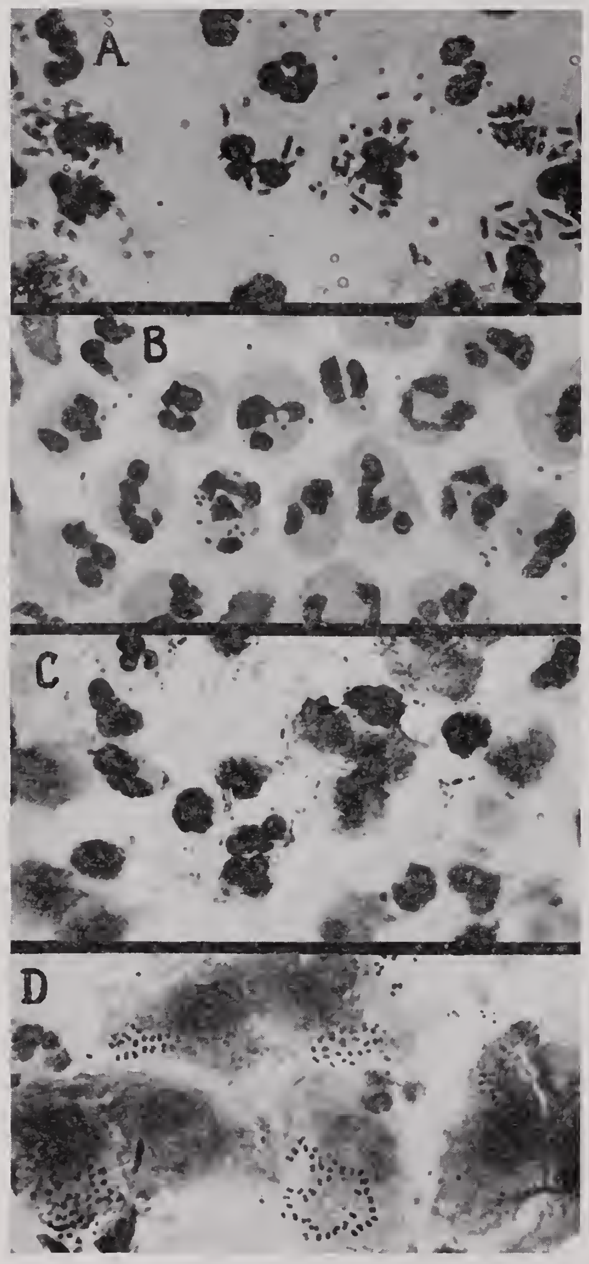

Fig. 5. Good and poor spreads from same areas.

A. Meatal drop that should be wiped away, being mostly nondescript debris and saprophytic germs.

B. Urethral drop after cleaning meatus; both intra- and extra-cellular gonococci.

C. Pus from gonorrheal abscess; decomposing pus cells and secondary invading organisms.

D. Curretting from wall of abscess showing gonococci growing upon surface lining cells.

SECURING MORE INFORMATIVE SLIDES

More satisfactory slides are secured by using a bacteriologist's wire loop to curette the membrane after having wiped away the excess of old pus (figs. 5 A and B). It is spread over but a very small area so that time be not wasted in viewing irrelevant fields. If one prefers applicators, the cotton need be scant and wound tightly, as there may not be sufficient material both to dampen the cotton and smear the slide. Dipping the stick in collodion before winding the cotton prevents it from slipping off later.

Pus evacuated from an abscess (fig. 5 C) is not entirely satisfactory for examination. Too often it contains but disintegrating pus cells and saprophytic germs. If the pus be wiped away and a curetting taken from the walls, one most likely finds the germs growing on the lining cells and within the phagocytes (fig. 5 D).

Better diagnostic slides are secured from a quiescent cervix after wiping the mucus away, and then compressing the walls between the speculum jaws to express secretion. Excessive mucus can best be removed by using the ordinary chemical laboratory waterpull suction pump (fig. 6) with sterilizable glass nozzle ends. A long nozzle utility piston syringe will also serve.

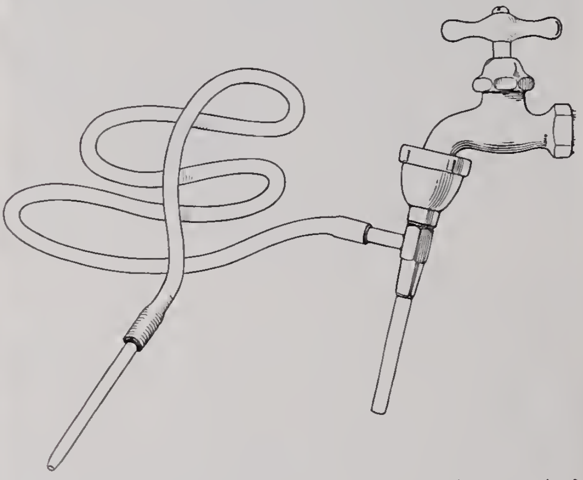

Fig. 6. Water suction pump for removing cervical mucus before slide taking.

Often an endometrial smear is important with the multipara having a torn, eroded cervix. The gonococcus may fail to grow upon an injured cervix because of it being naturally poor soil or other saprophytic organisms forming gonococcus growth-inhibiting substances. The gonococcus does grow upon endometrial surfaces and even within the walls itself, assertions to the contrary notwithstanding. Slides from this area can be secured uncontaminated by first dilating the canal and then inserting the instrument (fig. 7). Its inside is wiped with sterile cotton on a wire loop. One then inserts the regular loop through the tube into the uterine cavity and there secures a specimen for a smear.

AFTER SULFONAMIDE THERAPY

Following ingestion of sulfonamides, both gonococci and other organisms may become atypical as to size, shape, staining characteristics and relationships to other elements, as the cells and mucus about them. The gonococcus germ may become saprophytic, provoking insignificant reaction of inflammation. Other organisms, particularly coliform bacilli in the early division stage, being naturally gram-negative, may resemble the gonococcus, particularly if some become intracellular. Again, the slides may show but an occasional or perhaps two or even four extra- or intracellular organisms, or what resembles them may be fragments of nuclei.

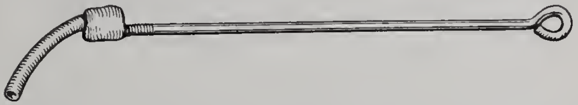

Fig. 7. Canula for damming off cervical contamination when taking intrauterine slides; made from 3/16 inch copper tubing fastened to a brass rod.

One needs then to reexamine the patient at once, after cleaning out all pus and mucus and get loop curettings from the suspected epithelial surfaces. If perseverance does not secure a satisfactory spread, waiting a day and repeating may give a better one. Agitation of the examination may devitalize the tissues so that the organisms grow better. Diplococci present in a treated patient should be tentatively considered as gonococci. Before passing opinion, it is well to wait and repeat the slide taking. Such a person will not suffer any particular discomfort from waiting.

If the slides are too questionable, one can promote gonococcal growth without injuring the patient by bathing the suspected area with culture media. Urethral injections of ordinary bacteriologic broth at a pH of 7.6, containing 2 per cent glucose on a suspected infected area, cultures gonococci admirably. It also can be used to saturate a tampon placed against the cervix. Also, five per cent dextrose urethral injections or packing the powdered dextrose against the cervix will serve the purpose of enriching and changing the fodder so that the gonococcus grows better.

Slides secured after broth or glucose provocation will show more of the extracellular organisms. The staining and morphologic characteristics remain the same. Two days is sufficient of the provocative treatment. Continued longer, it may assist in a cure. Alcoholic or sexual indulgence is never necessary for provoking a quiescent gonorrhea.

FALSE POSITIVES IF BY SLIDE ONLY

The physician makes the diagnosis on history and clinical findings and uses the laboratory only for confirmation. Cultures alone will differentiate absolutely the Neisseriae, the gentialia of the opposite sex being the best culture medium. Agglutination, cultural and complement fixation tests indicate that just where the Neisseriae gonorrhea, meningitidis, catarrhalis and sicca shade into each other is very indefinite at times. All give the same staining reactions, yet the sicca is almost purely saprophytic, and catarrhalis but mildly pathogenic. The gonococcus will not grow in the nose, yet the other three will. The meningitidis will not grow in the urethra and the others will.

In the absence of cultural differentiation one must rely upon the history and clinical findings to establish a diagnosis in cases where pseudogonococci may be confused, except among those of habitual sexual looseness. Then the gonorrheal complement fixation test will help. A strong positive is evidence of a recent infection, with focal infection developing which, drained into the bloodstream, for practical purposes can be classed as still draining until proven otherwise.

CONCLUSIONS

1. A guide for studying microslides is presented.
2. Means of securing better slides are explained.
3. If this guide is used in studying the slides and the physician remembers that he makes the tentative diagnosis on history and clinical findings, and confirms it in the laboratory, the microslide diagnosis of atypical gonorrhea can be made to serve all practical purposes for the private practitioner.

CHRONIC BRUCELLOSIS*

Clark C. Goss, M.D.
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Acute brucellosis, or acute undulant fever as it has been referred to in the past, although not frequently encountered, has been well enough known to all of us that for many years we have considered it in the differential diagnosis of febrile illnesses of obscure etiology. To most of us it has meant a disease, in which the patient is acutely ill with chills, sweating, prostration and a fever which is remittent for a period of days, weeks or months, so that the temperature curve over a period of time is wavelike or undulating. In recent years it has been discovered that only a very small percentage of people infected with Brucella present this picture and the disease is far more common than was formerly realized; in fact, some believe it so common that it presents a major public health problem[1]. The newer conception of the disease is that it is usually chronic, may have many manifestations and fever may be slight or absent. To eliminate the confusion of the multiplicity of names applied to this disease and the false specificity of fever, the term brucellosis has been settled upon as a more satisfactory designation, since it simply implies infection with Brucella and can be applied to the infection in man or animals.

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*Read before a meeting of North Pacific Society of Internal Medicine, Victoria, B. C., Aug. 30, 1941.

Bruce first cultivated the causative organism in 1886 and soon thereafter reproduced the disease in monkeys by innoculating them with blood from the spleens of living patients, but it was not until 1904, when he headed the British Mediterranean Fever Commission to the island of Malta, that he established the source of human infection to be the milch goat. He called the organism Micrococcus melitensis. Bang of Denmark discovered the organism causing contagious abortion in cattle in 1897; he called it Bacillus abortus. Traum, in 1914, isolated an organism from fetuses prematurely expelled from sows which was later proved to be the causative organism. In 1918 Alice Evans of the U. S. Public Health Service showed that the melitensis and abortus strains were indistinguishable except by special agglutination tests and predicted that the Bacillus abortus would be found to be pathogenic for the human the same as the melitensis strain; this prediction was borne out, when, in 1924, Keefer of Baltimore reported the first case of brucellosis in a human due to the abortus strain[2]. Since then the melitesis, abortus and suis strains have all been classified under the generic term Brucella.

Occasional cases infected from goat's milk had been reported in this country since Bruce's discovery in 1904. Since Keefer's case from Brucella abortus in 1924, brucellosis has been reported from all parts of the U. S. as well as from practically all over the world.

Wherever the disease is found in animals, it will also be found in man. Accurate figures regarding the incidence in cattle are difficult to find, but here are some accurate ones that throw a little light on the situation: From July, 1934, to August, 1938, the U. S. Bureau of Animal Industry in line with the New Deal program to reduce the number of cattle, tested 26,952,739 cattle for brucellosis, of which 1,596,554 were found infected[3] (a little under 6 per cent). These were all slaughtered; however, the program has not been consistently carried on in all states, so the elimination of this many infested cattle may not have appreciably lowered the present incidence. A personal communication from the State Veterinarian of Washington this week presents the following data: Sixteen counties in the state of Washington are on the "Modified Accredited Areas for Bang's Disease", by which is meant that there was less than one per cent infection in the last complete testing of all herds in those counties. Testing is going on in the remainder of the counties at this time. A similar communication from the Oregon state veterinarian says that seventeen counties of that state are on the Modified Accredited list. Oregon leads the country in Bang's disease control; Washington is second.

The Brucella abortus localizes in the uterus, udders and lymphatics of the cow. From the udder, the organisms are discharged into the milk; this is the principal route of infection. Any time one drinks raw milk or consumes any other raw dairy product, he is potentially exposing himself to brucellosis. Direct contact with the tissues or discharges of an infected animal is a frequent source of infection; thus packing house employees, farmers and veterinarians have shown a high incidence of the disease. Laboratory workers have often become infected. Viability of the organism is high; it will live from one to three months in soil, fecal discharges or putrefied tissues. Direct sunlight destroys it. Pasteurization of milk destroys it in that medium. In spite of the high viability, many strains are slow and difficult to culture, requiring special media with varying CO_2 atmospheres[4].

Brucella melitensis from goat's milk produces the most serious form of the disease, and probably accounts for our original impression of its acute features. Cows may become infected with the melitensis strain and thus transmit that form to the human who has never consumed goat's milk; the same is true of the suis strain. The incubation period varies from a few days to as much as four months. The course and severity of the disease are extremely variable. The malignant form, oftenest due to the melitensis strain, may be rapidly fatal; however, there is only a 1-3 per cent mortality even with the acute forms[5]. Some cases are ill for a few days or weeks and recover without sequelae; others pass into a recurrent or chronic stage. Many are ill only for two or three days, are usually diagnosed as "flu." Particularly important for us to know is that *many are ambulatory throughout their illness;* this type embraces most of the cases designated as chronic brucellosis. It may last many years. Spontaneous and permanent cure no doubt occurs in many instances. The disease may become latent, recurring with or after another debilitating illness or physical accident.

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[1] Prevalence of Undulant Fever (Brucellosis) in United States. Pub. Health Re. 53:1195-1199, 1938.

[2] Keefer, C. S.: Malta fever originating in Baltimore. Bull. Johns Hopkins Hosp., 35:6-14, Jan., 1924.

[3] Huddleston, I. F.: Brucellosis in Man and animals. The Commonwealth Fund, N. Y., 1939.

[4] Gould, S. E. and Huddleston, I. F.: Diagnostic Methods in Undulant Fever. J.A.M.A. 109:1971-74, 1937.

[5] Hardy, A. V., Jordan, C. F. and Borts, I. H.: Undulant Fever; Epidemiologic and Clinical Observations in Iowa. J.A.M.A. 10:559-564, Aug. 22, 1936.

The pathology of the disease is not well understood, even in fatal cases it sometimes being difficult to determine at autopsy what was actually the cause of death. However, it is to be noted that in different instances the organism has been cultured from practically every organ and tissue of the body; thus, it has been compared to tuberculosis and syphilis in its systemic invasiveness. Lymphatic tissue is most likely to yield positive culture in the chronic case.[6] Its predilection for the generative organs in the human as in the animal has not been proved, although many cases of pelvic infection in women have been reported.

An accurate definition of chronic brucellosis is difficult to give. It can best be summarized by saying that it is characterized by chronic ill health with many of the manifestations of a neurosis, plus a slight to moderate afternoon temperature which may be continuous or remittent. When resting, there usually is no fever. As stated above, there may be signs of activity of the disease without any fever, although this is not usual. The complaints are many and varied, but those of weakness, sweating, palpitation, anxiety, restlessness, vague aches and pains are prominent. Such a case frequently has a "steamed up" feeling and appearance. Although not entirely disabled, they are complaining and inefficient. Practically all of them are number one tuberculosis suspects and usually are first so studied; second, they are hyperthyroid suspects and, third, are usually relegated to the neurotic limbo. As a rule, they give no history of an acute attack. Serologic and cultural examinations are usually negative.[7]

Since I became interested in this subject four years ago, I have encountered forty-four cases of chronic brucellosis. Twenty of them have been diagnosed by a skin allergy test alone, known as the brucellergin test; with the remainder, there has been added confirmation by the agglutination or opsonocytophagic tests alone or combined. Only 27 per cent have had positive agglutination. This includes some with a titer as low as 1-20. It should be noted that to avoid false positives, it is the policy of most laboratories to report as positive only serums producing agglutination in a titer of 1-80 or higher. To the physician who is alert to the picture of chronic brucellosis, positive agglutinations in a titer of 1-20 or higher should be reported. Two hundred and eighty patients, who for one reason or another have been considered brucellosis suspects, have been given brucellergin skin tests, fifty-two of whom reacted positively.

After clinical and laboratory evidence had been appraised, it was decided in the case of twelve of these positive skin reactors that there was no indication of activity of the disease and treatment was not suggested. One refused treatment, and one was in such a highly neurotic state about the disease that it was thought wise not to suggest treatment. This man, incidentally, had had a typical acute episode with the disease five years previously with a high agglutination titer, and at the time I tested him, had a 5 plus skin reaction using only half strength antigen, but a negative agglutination reaction. Thirty-eight, therefore, of the positive skin reactors have been treated, plus four others. Some of these have had gratifying results, some not. I shall speak of that later.

AIDS IN DIAGNOSING CHRONIC BRUCELLOSIS

The brucellergin test is comparable to the tuberculin test and should be considered to have comparable significance. I have used brucella allergen prepared by Huddleston of Michigan State College. A suspension of killed brucella organisms such as is in commercial vaccines may be used, although a warning should be sounded about the use of the melitensis strain, for at times it produces a serious reaction. One tenth cc. is injected intradermally and the test read at the end of twenty-four or forty-eight hours, preferably the latter. Even using the above refined allergen, the reaction at times is very severe. Some of my cases have had edema of the forearm several centimeters in diameter, with chills, swelling of the regional lympathics, fever as high as 102° and a small slough at the point of injection which has taken two or three months to heal. With most all positive reactions, there is some elevation of temperature. The clinician has to decide if positive reactions mean past infection with adequate immunity or continuing active infection. Here the laboratory lends a hand.

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[6] Wise, N. B. and Posten, M. A.: Coexistence of Brucella Infection and Hodgkin's Disease. J.A.M.A. 115:1976-1984, Dec. 7, 1940.

[7] Evans, A. C.: Chronic Brucellosis. J.A.M.A. 103:665-667, Sept. 1, 1934.

Huddleston[8] originally applied the opsonocytophagic test to the above problem. He showed, and his work was confirmed by a Vanderbilt group and others, that with adequate immunity or cure the blood should exhibit sufficient opsonins for the brucella organism to produce a marked opsonocytophagic reaction, when a live culture of the organisms is suspended with fresh blood containing exactly 0.8 per cent sodium citrate. A slight or moderate opsonocytophagic reaction in the presence of a positive skin test is taken to mean infection with insufficient immunity.

This is a complicated procedure, requiring expert laboratory technical assistance. I used it routinely for a long time and no doubt it is of help both in acting as a guide in interpreting skin reactions, determining how much treatment shall be given and occasionally in diagnosis where the skin and agglutination tests are both negative, which, it should be emphasized, is not infrequently the case. But I found it tricky to interpret and at times apparently inconsistent, so I have largely given it up, instead relying on clinical judgment for interpretation. With recent encouragement from the literature I believe I shall resume use of this diagnostic aid, but unfortunately clinical judgment has to be relied on to a large degree.

I have tried blood culture in several of my cases without positive results in any. I have been privileged to review the case of one of my conferees who secured a positive blood culture in the absence of any other positive test. Alice Evans and others have reported many similar instances.[9] Necessary special technics for culture have already been alluded to. Calder[10] believes there is a lymphocytosis with a shift toward immaturity of cells which is typical in brucellosis; also he finds a macrocytic anemia. Sedimentation rate, total leukocyte count in the chronic case are normal.

REPORTS OF CASES

Case 1. Male, 49, first seen April 3, 1935, complaining of spells of chills and fever, lasting several days at a time, which had begun eight years previously from no known cause. He estimated that he had had about fifteen such spells. Between attacks he had no symptoms except felt tired and weak all the time.

I suspected brucellosis, but the agglutination test was reported negative. He told me at least one other doctor had suspected the same thing with the same result. However, I also found a positive Wassermann and fixed pupils, so concluded his syphilis must in some strange way have something to do with his spells, and treated his syphilis. He did not improve. He had a plus 2 thyroid enlargement. When he did not respond to antisyphilitic therapy I did a B.M.R. which was plus 20. I referred him to a goiter specialist, but he refused to go and quit me.

I heard no more of him until three years later, when he returned with the story that some doctor had thought he had tuberculosis and had sent him to the state Tuberculosis Clinic, where no tubercle bacilli were found, but the positive Wassermann again was found and he was referred back to me for treatment. His condition was still the same. Having fallen wise to the vagaries of brucellosis by that time, I did a skin test which was negative. Opsonocytophagic test showed a marked positive and agglutination was then positive 1-20. I disregarded the marked opsonocytophagic and gave him specific treatment. He improved strikingly and has done well since, although he has had mild relapses which have promptly responded to specific treatment.

Case 2. A farmer, age 65, first seen in June, 1940, complaining of vague pain in the left chest and shoulder, irregularity and pounding of the heart and choking sensations "as if neck were being gripped." He had been in poor health for many years, though not disabled.

Nothing definite was found to account for his symptoms; there was no cardiac lesion. His temperature was normal. Brucellergin test was positive, one plus. Agglutination was negative. The mildly positive brucellergin was not considered very significant until, on discussing the matter with him, he brought forth the additional history that in 1923 he first took up farming and in the beginning had trouble with contagious abortion in his cows. A little later his own ill health began; he ran a slight fever for many months; he was studied by four tuberculosis specialists and even spent a short time in a sanatorium as a tuberculous suspect, but a definite diagnosis was never made. He more or less accustomed himself to ill health and went ahead at his work. Had I not uncovered the above evidence, I am sure I would have put him down as a thin, overworked, frustrated, neurotic farmer which, of course, you may say he is, but with cause.

He has not responded well to treatment. In spite of the mildly positive brucellergin reaction, he has reactions to treatment consisting of achiness and malaise which has precluded adequate dosage. To me he represents a "burnt out" case which is beyond help.

Case 3. Female, age 20. First seen April 10, 1929, complaining of exhaustion, palpitation of heart, continued fever. She was in excellent health up until age 13, when she had a very serious time with the "flu," being confined to bed for three months and later having a relapse requiring further confinement. She had had a daily temperature of 100 to 101 degrees ever since. She had had all kinds of treatment. I could find nothing to explain the temperature. Her general condition was always good in spite of her protestations of exhaustion; her weight was constant and normal.

She was so highly neurotic, or so she seemed to me, that I was inclined to disregard many of her complaints, even the fever. I saw her off and on for eight years, at which time I became so exasperated at trying to do something for her that I virtually expelled her from my office with the admonition to leave her family, get out on her own and think about something besides her ailments. Two years later I swallowed my pride, called her up and invited her into my office for a brucellergin test. She was still running her temperature and still had the same complaints.

She gave one of the serious reactions I have mentioned. Agglutination was negative. Opsonocytophagic was negative. On specific treatment she improved, subsequently married and lived a normal life until her husband died suddenly a few months ago. She is having rather more than normal difficulty in adjusting to her loss but has not relapsed to her former state. Interestingly enough, while I was formerly treating her, she developed a serious menorrhagia of supposed functional origin for which a gynecologist gave her roentgen treatment.

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[8] Huddleston, I. F., Johnson, H. W. and Homann, E. E.: Study of Opsonocytophagic Power of Blood and Allergic Skin Reactions in Brucella Infection and Immunity in Man. A. J. Pub. Health, 23:917-929, Sept., 1933.

[9] Robinson, F. H. and Evans, A. C.: Chronic Brucellosis in Charlotte, N. C. J.A.M.A. 113:201-206, July 15, 1939.

[10] Calder, R. M., Steen, C. and Baker, L.: Blood Studies in Brucellosis. J.A.M.A. 112:1893-1898, May 13, 1939.

Case 4. Male, age 16. First seen Sept. 5, 1939, complaining of cough, shortness of breath and fatigue. He had been well until six months previously, when he fell eighteen feet out of a school house window, fracturing his right clavicle. His fall was broken by a bush and he was not unconscious. He was in bed for a week then. The bone united without event, but as his mother put it, he immediately "began acting like a sick person"; he lost his pep and energy and developed vague symptoms of various kinds. His local doctor finally labeled him neurotic.

I found nothing to account for his symptoms. Roentgenogram of the chest was negative. Brucellergin test was 4 plus positive. Agglutination was negative. Opsonocytophagic was negative. He improved a great deal on specific treatment, and soon resumed normal youthful activities.

Case 5. Female, age 21. A doctor's wife, first seen July 27, 1933, complaining of fatigue and palpitation. These symptoms had come on immediately after her first pregnancy which had terminated three months previously without event. She had a slight fever at times.

I studied her carefully, as did four other physicians. She was variously suspected of tuberculosis, hyperthyroidism, rheumatic fever and neurosis. None of these, aside from neurosis, had any confirmation. She eventually got to feeling better for no known reason. She relapsed into the same state after her second pregnancy in January, 1939. Brucellergin test was then strongly positive. Agglutination negative, opsonocytophagic moderate. She immediately improved on specific treatment and has remained well since. Her treatment was given by her husband at home.

Two of my cases have a mild chronic ulcerative colitis; one, a young woman, in addition has all the typical signs of chronic brucellosis; the other a boy, has no typical signs of it; the woman is improving very slowly under treatment, the boy rapidly. The woman had a positive agglutination 1-160 in addition to a 5 plus skin reaction, the boy a negative agglutination, negative blood culture, sigmoid scrapings culture, and a 4 plus positive skin reaction. One case, a woman with bizarre symptoms was operated on for chronic cholecystitis and a fairly normal looking gallbladder found, but an early atrophic cirrhosis of the liver was present. The case of positive blood culture referred to above has a large liver. One case of serious insomnia with a manic depressive habitus has improved a great deal under specific treatment. I have had good results in 43 per cent of the forty-two cases, fair results in 22 per cent, and poor results in 16 per cent. The remainder are still under treatment.

TREATMENT

I believe there is no question that sulfonamide drug medication is the treatment of choice in the acute case. Poor results from vaccine or serum treatment in the acute cases prior to the advent of chemotherapy was pretty much the rule. Chemotherapy has no place in the treatment of chronic brucellosis.[11] It has been my experience, and that of others, that it makes them worse. Vaccine treatment has to be relied on in the chronic cases.

I have almost exclusively used a brucella antigen prepared by Huddleston of Michigan State, called brucellin. Originally he, as well as others, advised a few rather large doses of this filtrate, sufficient to produce a brisk febrile reaction. In this way he felt the average case could be cured in two or three weeks. I have not used this principle except in cases which have a negative or mildly positive brucellergin reaction. I have found it preferable to follow a beginning minute dosage desensitizing principle. It has been my experience that, if I give enough antigen to produce more than a slight local erythema reaction at any time, it makes them worse.

Desensitization has to be carried out in the beginning much the same as with a pollen allergy; then, as larger doses of the antigen can be given, a proper immunity can be established with a subsidence of symptoms. This principle of treatment is now being observed by most commentators on this subject.[11] Unfortunately, it is a long drawn out procedure often requiring months. Harris has advanced some ideas regarding intravenous combined with subcutaneous injections, which I plan to follow in the future in stubborn cases. It seems advisable, when using the stock vaccines, to use the abortus instead of the melitensis strain, in that the latter may produce violent reactions, and at the same time fail to build up adequate opsonins.

Treatment is a sad substitute for prevention of this malady. Of course, it can be eliminated, if self-evident appropriate measures are carried out. No raw milk or dairy products should be consumed. As has been pointed out in the human, dairy stock may also have a negative agglutination reaction and still have brucellosis; such a cow may continue to discharge Brucella in the milk.[12] Therefore, no matter how well certified raw milk is, its consumption may be disastrous. The Bang's disease control program now in progress should have the unqualified support of the medical profession.

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[11] Harris, H. J.: Brucellosis. Paul J. Hoeber, Inc., N. Y. 1941.

[12] Doyle, T. M. and Beckett, F. N.: Isolation of Brucella Abortus from Milk of Cows with Negative Blood Reactions to Agglutination Test. J. Comp. Path. & Therap. 49:320-327, Dec., 1936

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING, 1942

STATE BOARD OF HEALTH

Venereal Disease Experts Visit State. On October 15 and 16 A. J. Aselmeyer, Assistant Chief, Division of Venereal Diseases, U. S. Public Health Service, and Miss Lida Usilton, Senior Statistician, visited the Oregon State Board of Health.

New Health Officer at Eugene. C. R. Lindgren was recently appointed Lane County Health Officer. Dr. Lindgren was acting on a part time basis during the absence of E. L. Gardner.

Handicapped Children Studied. Representatives of the State Board of Health met with members of the State Department of Education October 20 to cooperate in developing a study of handicapped children in Oregon.

Health Officers Attend APHA. Miss Lucille Perozzi, Director of Public Health nurses and Miss Laura Wells, Nutrition Consultant of the Oregon State Board of Health, attended the American Public Health Association at Atlantic City.

Dr. Warren Gardner, consultant in hearing and vision, has been active during the last month carrying on hearing programs in central Oregon.

New Sanitary Engineer. On November 1, Milton Spies assumed duties with the State Board of Health as associate sanitary engineer. Mr. Spies is employed by the Oregon State Sanitary Authority and came to Oregon from a sanitary engineer position with the South Dakota Health Department.

Trailer Regulations Adopted. The Board of Health in its regular meeting October 6 adopted more stringent regulations relative to supervision, construction, operation and maintenance of trailer parks and camps, especially in defense areas.

Malaria Outbreak. Following a small outbreak of malaria in Yamhill and Marion Counties, control measures against this disease are being adopted. These measures are to consist of a survey to determine the actual prevalence of the disease. Following the survey, mosquito breeding control measures, as well as a residence screening program, will be initiated.

STATE BOARD of MEDICAL EXAMINERS

The Oregon State Board of Medical Examiners met at the Board offices located in the Failing Building October 16-18, at which time licenses to practice medicine and surgery within the State of Oregon, based on reciprocity with the several states or endorsement of National Board Certificates, were issued to Joseph Irvin Codd, formerly of Missouri and now associated with Hugh Brown of Tillamook; John Allison Benjamin, Jr., formerly of Los Angeles and now associated with John G. Cheetham of Portland; John Edward Hughes, formerly located at Winnemucca, Nevada; John Francis Belz, formerly of San Francisco and now associated with the Oregon State Board of Health; Irwin Isaac Boehr, formerly of Henderson, Nebraska, and now located at Hermiston; Lawrence William Buonocore, formerly of New York and at present on duty with the CCC at Medford; Alice Antoinette Pendleton, formerly of Decatur, Illinois, and now located at Astoria; George Lewis Ray, formerly of Kentucky and now associated with John Raaf of Portland; Paul Kruse Sievers, formerly of Colorado, and now located at McMinnville; and Maurice T. Wood of Oregon, now associated with Milton V. Walker of Eugene. A license to practice osteopathy and surgery was also issued to Cyril Lloyd Peterson now located at Beatrice, Nebraska.

The Board devoted Thursday evening to regular Board business and consumed the remaining time in hearing a revocation proceeding which has been continued to December 9-10, at which time the Board will hear further testimony and conduct such other business as may be before it, including reciprocity applications.

At said meeting the dates of the next State Board examination in medicine and surgery and osteopathy were set for January 21-23, 1942, at the University of Oregon Medical School Library.

The Board wishes to call attention to the fact that registration applications for the year 1942 were, as provided by law, sent to all physicians and surgeons under date of October 15. This registration fee is due and payable on or before December 11, after which a delinquency may be declared, fines assessed and licenses subjected to revocation. This registration fee is required only of practitioners in active practice. Physicians receiving notification of registration who have retired from practice or are absent from the state should immediately so advise the Board offices.

U. OF O. MEDICAL SCHOOL

Fall term of University of Oregon Medical school opened October 2 with 259 students enrolled, an all time high. Increase in registration, up from 246 in 1940-41, may be attributed to a larger freshman class, according to David W. E. Baird, associate dean. The boost in freshman admittance from 65 to 75 was allowed by the school in cooperation with the government in its national defense program for more doctors.

Dr. Baird is acting dean during the convalescence of Dean Richard B. Dillehunt who is now at his home after several months treatment in Portland medical school for an illness suffered last summer. Attending physicians have described Dr. Dillehunt as a "model patient." In fact, observed one, "this is probably the first good rest the Dean ever had."

Praise for the school's new $360,000 library and auditorium was voiced recently, that came from a man qualified to speak. "Oregon can be proud of its medical library, it is one of the finest in the nation," said Dr. Allan Gregg, director of the medical sciences division of the Rockefeller Foundation. "It is a splendid building. I would say the building fund has been well utilized."

The Foundation matched a $100,000 gift of Dr. John E. Weeks, as did PWA, to build the new structure. But Dr. Gregg was the first Foundation representative to see the finished building. In fact, the Foundation had never even seen plans for the building.

The University Medical Center planned to participate in Portland's Hallowe'en blackout. "Lights out" was to be the order of the night in all hospital units of the school. Approximately thirty residents and internes, 100 nurses and 435 patients were to attempt carrying on routine work under blackout conditions of war. To many members of the school's staff this was old stuff for they had meted medical service in the real thing of World War I.

The University State Tuberculosis Hospital planned its second birthday party for October 30. Each year on the anniversary of the hospital's opening the staff meets to review objectives and accomplishments of the past year.

Doernbecher Children's Hospital has treated thirty-eight cases of infantile paralysis since August 1, according to Grace Phelps, superintendent. The number is the highest for any similar period in the past ten years. Approximately half of the cases were admitted from the Portland area, the rest coming from all parts of Oregon.

There will be a new color note around the medical school, come next spring. Dr. R. E. Kleinsorge of Silverton, newest member of the Oregon State Board of Higher Education, has given the school several hundred iris bulbs from his famous Silverton gardens. They have been planted as the initial step in a new landscaping program.

SOCIETY MEETINGS

BAKER COUNTY MEDICAL SOCIETY

At a dinner meeting in Baker, to which members of the Malheur County Medical Society were invited, W. W. Baum of Salem, president of the State Society, discussed "Policies and Activities of Oregon State Medical Society." Henry Garnjobst of Corvallis talked on "Prepayment Medical Service Plans Proposed by the Farm Security Administration."

CENTRAL OREGON MEDICAL SOCIETY

Central Oregon Medical Society met in Bend, October 7. W. W. Baum, Salem, president of the State Society, discussed "Policies and Activities of the Oregon State Medical Society." John R. Montague of Portland, secretary of the State Society, discussed "An Effective Form of Postgraduate Instruction."

JACKSON COUNTY MEDICAL SOCIETY

Jackson County Medical Society held the regular monthly meeting in Ashland. I. E. Green of Medford spoke on "Pathology of Appendicitis."

LANE COUNTY MEDICAL SOCIETY

The regular meeting of Lane County Medical Society was held October 20 in conjunction with the meeting of the Staff of Sacred Heart Hospital. "Pneumonia and Nephritis with Metabolic Studies" was discussed by W. H. Pollard, C. H. Phetteplace, and R. C. Romig. "Epilepsy" was discussed by M. S. Jones, N. P. Anderson, I. R. Fox, R. M. Overstreet discussed "Equine Meningoencephalitis."

MULTNOMAH COUNTY MEDICAL SOCIETY

Multnomah County Medical Society held its first meeting of the year in Portland October 1. John Raaf presented a discussion on "Indian Medicine and the Medicine Man." Leo S. Lucas, Harry C. Blair and Gilbert J. McKelvey discussed "Disabilities and Fractures of the Knee Joint."

MEDICAL NOTES

Oregon Association of Hospitals held its midyear meeting October 24 and 25 at the Dorchester House, Ocean Lake. The program closed with a banquet at which W. W. Baum, president of the Oregon State Medical Society, was principal speaker.

Crippled Children. Thirty patients under supervision of Linn County Crippled Children's Clinic underwent checkup examinations by A. Guerny Kimberly of Portland. Improvement had occurred in nearly all cases.

Frank G. McCartney has become associated with Dr. M. H. Smith of Astoria.

Richard Tunis Rich, graduate of Jefferson Medical College, has become associated with Gerald Smith of Woodburn.

OBITUARIES

Dr. R. C. Faust of Eugene died September 10 at the age of 62. He had been practicing medicine in Eugene since 1926 and before this practiced in South Dakota and Idaho. The cause of death was hypertensive cardiovascular renal disease with uremia.

Dr. Charles A. Fowler of Bend died September 17 at the age of 83. He had been practicing in Bend since 1919 and had been City Health Officer since 1920. The cause of death was circulatory insufficiency, complicating fractured hip.

Dr. Marion Le Cocq of Milwaukie died September 18 at the age of 47. He graduated from the University of Oregon Medical School and has practiced in Portland since. The cause of death was bronchopneumonia.

Dr. John R. Steagall of Portland died unexpectedly September 25. He had practiced in Portland for 22 years. The cause of death was coronary thrombosis.

Dr. Charles H. Barr of Canby died October 9 at the age of 33. He graduated from the University of Oregon Medical School and has been practicing in Canby since his internship at St. Vincent's Hospital in Portland. Death was due to injuries received in an automobile accident.

WOMAN'S AUXILIARY

The fifteenth annual convention of the Woman's Auxiliary to Oregon State Medical Society was called to order by the president, Mrs. C. E. Sears, on Thursday, September

4, 1941. After the usual business meeting was finished, the ladies adjourned to the Waverley Country Club for luncheon. Honor guest of the day was Mrs. Roscoe E. Mosiman, and her daughter, Miss Mosiman, of Seattle. Mrs. Mosiman gave the ladies assembled a very inspiring talk on auxiliary affairs. After the luncheon many took the trip to McLoughlin House, at Oregon City, which has now become a National Monument. A Chinese dinner was arranged at seven o'clock at the Pagoda Restaurant. Mrs. Mosiman and her daughter were honor guests. A Chinese entertainer, Miss Wong, gave three entertaining readings after dinner.

The business meeting Friday morning ended with luncheon at the Portland Hotel. Dr. Frank H. Lahey, Boston, Mass., gave an address on "Present Day Problems in Medicine."

The afternoon business meeting came to a close with induction of officers. Mrs. Wilson Johnston, of Portland, performed the rites in a charming and gracious manner. Mrs. Charles E. Hunt of Eugene is now president and Mrs. F. Bertram Zener, of Portland, president-elect. A tea was held later in the afternoon at the Oswego Lake home of Mrs. E. Merle Taylor, for the pleasure of the visiting ladies. Everyone was taken on a boating trip around the lake which was enjoyed immensely. Mrs. J. J. Rosenberg of Portland was hostess, and was responsible for the delicious food served at all functions and for the attractive floral decorations. The annual banquet was held in the Multnomah Hotel at 6:30 on Friday, when the Ladies Auxiliary met with the Oregon State Medical Society.

The postconvention board meeting was held immediately after the breakfast at the Campbell Court Hotel. After the meeting many adjourned to Lloyd's Golf Course, Portland, where the annual golf tournament took place. Winners were Mrs. Roy McDaniel of Portland who took first prize, and also won the perpetual trophy given by Mrs. John G. Abele, and Mrs. Dorwin Palmer who won second prize. A luncheon was enjoyed at one o'clock at the clubhouse with many who did not play golf joining with the golfers for lunch.

The September meeting of Polk-Yamhill-Marion County Auxiliary was held in the home of Mrs. H. J. Clement, with twenty members present. Mrs. G. C. Bellinger gave a report of the State Convention. Mrs. Baum, the president, reported that members had contributed $49.50 towards the *Hygeia* fund. It was voted to contribute to the state fund one dollar towards the McLoughlin House chair, a project of the state auxiliary. Miss Isabelle Gates spoke to the ladies on the work being done in the bean yards, hop yards, etc., in the way of Christian education for the children whose parents follow the crops.

The October meeting was held in the home of Mrs. Carl Emmons, thirty-three members being present. Guest speaker was Mrs. Thelma Mitchell, home economist and formerly with the Oregon State College extension service in the home economics division. Mrs. Mitchell is Marion County chairman for the Nutrition committee for civilian defense. Her topic was "Nutrition as a Factor in Civilian Defense." Dr. Ralph Purvine spoke to the group on Disaster Relief.

The Coos-Curry Auxiliary met on October first. They decided to carry on their project of the County Poor Farm, as they have done in previous years, and to do some sewing for the Red Cross. Plans for the annual Christmas party at the farm were discussed. Mrs. Donald Long and Mrs. Melvin Johnson reported on the State convention held in Portland.

The Study Group of Multnomah County Auxiliary met at the home of Mrs. Laurence R. Serrurier, in September. A reel was shown at Morningside Hospital on the insulin and metrazol treatment for dementia praecox. A clinic was also given by Dr. Haskins and Dr. Serrurier. Luncheon was served at 1 o'clock. The Study Group met in October at the home of Mrs. F. H. Dammasch. Mrs. Charles H. Manlove reported on the book "You Can't Do Business with Hitler." Luncheon was served at 1 o'clock.

The Multnomah County Auxiliary met in the Auditorium of the Medical-Dental Building on Monday, October 27. The subject of the day was "Our Part in National Defense." Miss Elizabeth Baldwin, member of the State Nutrition Committee, and Home Economist for Multnomah County Welfare Bureau, spoke on "Spending the Dollar According to New Nutrition Standards." The meeting was conducted by Mrs. Charles H. Manlove, President. Tea and a social hour followed the meeting.

Mrs. Laurence R. Serrurier,
Publicity Chairman

CIVILIAN DEFENSE

Washington, D. C., September 25, 1941.

According to a joint statement issued on September 4 by the U. S. Director of the Office of Civilian Defense, F. H. LaGuardia, and the Chairman of the American National Red Cross, Norman H. Davis, State and local defense councils are the official agencies responsible for the coordination of all available resources which may be required for civilian protection in the event of belligerent action. Defense Councils should therefore acquaint themselves with the resources of the local Red Cross Chapters in providing food, clothing, shelter, nursing care, transportation, and other basic necessities and should integrate them into the comprehensive local program. Duplication of trained and experienced personnel and of available supplies of the Red Cross should be avoided except where supplementation is essential to meet the anticipated needs of the community.

George Baehr, M.D., *Chief Medical Officer*

CHANGE IN PHYSICAL EXAMINATION

Selective Service Headquarters has been informed that on or before January 1, 1942, a plan will be put into effect whereby all registrants will be physically examined by Army Examining Boards, thus relieving civilian doctors of this service.

When this plan is put into effect it is the desire of this Headquarters that all physicians attached to Local and Advisory Boards within the State of Washington retain their appointments and remain in a state of status quo until such time as the new plan shall have proved itself and become a permanent procedure.

At this time the State Director wishes to express his deep sense of appreciation and thanks for the untiring effort and time-consuming work which the members of Washington State Medical Association have so unstintingly given.

William P. Smith, *Major, M.C., Medical Advisor*

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING, SPOKANE, AUG. 17-19, 1942

BOARD OF TRUSTEES MEETING

The 1942 meeting of the Washington State Medical Association will be held in Spokane, August 17-19. This date was selected by the Board of Trustees at their meeting held in Seattle, October 12. Spokane, as the place of the meeting, was approved by the House of Delegates at the annual meeting held in Seattle. Headquarters for the 1942 convention will be at the Davenport hotel.

The Board of Trustees also acted upon the following matters:

Appointed C. B. Cone of Vancouver and E. C. Leach of Arlington for three year terms to the Committee on Medical Economics; elected I. A. Weichbrodt of Seattle to Public Laws Committee for three year term; appointed James M. Bowers of Seattle to Committee on Publication (NORTHWEST MEDICINE), filling unexpired term created by resignation of Herbert E. Coe; elected Joseph W. Lynch of Spokane to Scientific Work Committee for three year term and reappointed the Executive, Public Relations and Industrial Insurance and Health Committees to continue serving during pleasure of the Board.

The Board further reviewed and approved committee appointments made by the President, George W. Cornett; and instructed the secretary to protest, along with the Washington State Radiological Society and the Northwest Society of Clinical Pathologists, against the new fee schedule issued by the National and Washington State Selective Service System.

The Central Office of the State Association announced this month the entire list of committees as elected by the House of Delegates, elected or appointed by the Board of Trustees or appointed by the President. The list follows:

OFFICERS

Vice-President	Herbert E. Coe, Seattle
President-Elect	A. P. Duryee, Everett
President	George W. Cornett, Yakima
Secretary-Treasurer	V. W. Spickard, Seattle
Assistant Secretary-Treasurer	A. J. Bowles, Seattle
Speaker, House of Delegates	Wilmot D. Read, Tacoma
Executive Secretary	Arthur Anderson, Seattle

BOARD OF TRUSTEES	*Term Expires*
President, G. W. Cornett, 102 S. Naches Ave., Yakima, Chairman	1943
Pres.-Elect, A. P. Duryee, Med. Dent., Bldg., Everett	1944
Vice-Pres., H. E. Coe, 1008 Summit Ave., Seattle	1942
Past Pres., H. D. Dudley, Cobb Bldg., Seattle	1942
Sec.-Treas., V. W. Spickard, Cobb Bldg., Seattle	1942
Asst. Sec.-Treas., A. J. Bowles, Stimson Bldg., Seattle	1942
AMA Del., J. H. O'Shea, Old Natl. Bk. Bldg., Spokane	1943
AMA Del., R. L. Zech, Med. Dent. Bldg., Seattle	1942
Speaker, W. D. Read, Rust Bldg., Tacoma	1942
Ch. Fin. Comm., V. W. Spickard, Cobb Bldg., Seattle	1942
Ch. Med. Def., H. D. Dudley, Cobb Bldg., Seattle	1943
*Trustee, G. H. Anderson, Med. Dent. Bldg., Spokane	1942
*Trustee, J. E. Bittner, Jr., Larson Bldg., Yakima	1942
*Trustee, A. E. Gerhardt, Wenatchee	1943
*Trustee, W. H. Tousey, Med. Dent. Bldg., Spokane	1943
*Trustee, M. S. Jared, Stimson Bldg., Seattle	1942
*Trustee, W. B. Penney, Med. Arts Bldg., Tacoma	1943
*Trustee, J. F. Christensen, Kelso	1942
*Trustee, F. H. Douglass, 1008 Summit Ave., Seattle	1943

*Elected Trustee

COMMITTEES

Medical Defense

Dist. 1—H. D. Dudley, Chrmn., Cobb Bldg., Seattle	1943
Dist. 2—J. R. Morrison, Medical Bldg., Bellingham	1943
Dist. 3—M. P. Graham, Becker Bldg., Aberdeen	1943
Dist. 4—G. W. Cornett, 102 S. Naches Ave., Yakima	1943
Dist. 5—Carroll Smith, Med. Dent. Bldg., Spokane	1943
Dist. 6—W. D. Read, Rust Bldg., Tacoma	1943

Delegates to A.M.A. (Elected by House of Delegates)

R. L. Zech, Med. Dent. Bldg., Seattle	1942
Alternate, F. H. Douglass, 1008 Summit, Seattle	
J. H. O'Shea, Old Natl. Bank Bldg., Spokane	1943
Alternate, D. G. Corbett, Med. Dent. Bldg., Spokane	

Diabetes Committee (Subcommittee to Committee on Public Health and Sanitation. Appointed by President, 1 year term)

L. J. Palmer, 1115 Terry Ave., Seattle, Chairman.
Paul J. Lewis, 102 South Naches Ave., Yakima.
W. B. Penney, Medical Arts Bldg., Tacoma.
L. A. Greenwood, 1155 State Street, Bellingham.
George H. Anderson, Medical Dental Bldg., Spokane.
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Executive Committee (Selected by Board of Trustees to serve during its pleasure)

R. L. Zech, Medical Dental Bldg., Seattle, Chairman.
V. W. Spickard, Cobb Bldg., Seattle.
Homer D. Dudley, Cobb Bldg., Seattle.
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Finance Committee (Elected by House of Delegates for 3 year term, one member to be elected annually)

V. W. Spickard, Cobb Bldg., Seattle, Chairman	1942
A. T. Wanamaker, 1317 Marion St., Seattle	1943
A. O. Adams, Med. Dent. Bldg., Spokane	1944
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).	

Graduate Medical Education and Hospitals (Appointed by President for 3 year term, one member to be appointed annually)

H. D. Dudley, Cobb Bldg., Seattle, Chairman	1943
D. C. Hall, U. of Wash., Seattle	1942
D. G. Evans, Smith Tower, Seattle	1944
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).	

Industrial Insurance and Health (Appointed by Board of Trustees to serve during its pleasure)

H. T. Buckner, Cobb Bldg., Seattle, Chairman.
Harold E. Nichols, Stimson Bldg., Seattle.
J. H. Mathews, 1317 Marion St., Seattle.
I. O. McLemore, Stimson Bldg., Seattle.
R. C. Schaeffer, Medical Arts Bldg., Tacoma.
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Maternal and Child Welfare (Appointed by President for 5 year term)

H. H. Skinner, 102 S. Naches Ave., Yakima, Chrmn	1943
V. W. Spickard, Cobb Bldg., Seattle	1946
R. S. Mitchell, Wenatchee	1946
P. C. Kyle, Medical Arts Bldg., Tacoma	1945
H. E. Coe, 1008 Summit Ave., Seattle	1945
D. M. Dayton, Medical Arts Bldg., Tacoma	1944
G. G. Thompson, Stimson Bldg., Seattle	1944
H. L. Moon, White Salmon	1943
C. L. Lyon, Medical Dental Bldg., Spokane	1942
R. N. Hamblen, Medical Dental Bldg., Spokane	1942
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).	

Medical Defense (Nominated by Board of Trustees, elected by House of Delegates for 3 year term)

H. D. Dudley, Cobb Bldg., Seattle, Chairman	1943
J. R. Morrison, Medical Bldg., Bellingham	1943
M. P. Graham, Becker Bldg., Aberdeen	1943
G. W. Cornett, 102 S. Naches Ave., Yakima	1943
C. L. Smith, Med. Dent. Bldg., Spokane	1943
W. D. Read, Rust Bldg., Tacoma	1943
V. W. Spickard, Cobb Bldg., Seattle (ex officio).	

Medical Economics (Appointed by Board of Trustees for 3 year term, one member to be elected annually)
O. M. Rott, Med. Dent. Bldg., Spokane, Chairman.........1942
C. B. Cone, Vancouver..........1944
E. C. Leach, Arlington..........1943
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Medical Preparedness (Chairman appointed by the state representative of the National Medical Preparedness Committee. Committee is appointed by the Chairman)
R. L. Zech, Medical Dental Bldg., Seattle, Chairman.
Homer D. Dudley, Cobb Building, Seattle.
V. W. Spickard, Cobb Bldg., Seattle.
J. Reid Morrison, Bellingham.
N. L. Thompson, Medical Dental Bldg., Everett.
H. E. Rhodehamel, Medical Dental Bldg., Spokane.
George W. Cornett, 102 S. Naches Ave., Yakima.
J. H. Christensen, Kelso.

Neoplastic (Appointed by President to serve 1 year term)
C. B. Ward, Cobb Bldg., Seattle, Chairman.
E. I. Gilley, Herald Bldg., Bellingham.
D. V. Trueblood, Medical Dental Bldg., Seattle.
G. W. Cornett, 102 S. Naches Ave., Yakima.
J. T. Rooks, Walla Walla.
M. T. Harris, Medical Dental Bldg., Spokane.
Clyde R. Jensen, Cobb Bldg., Seattle.
S. T. Cantril, 1211 Marion St., Seattle.
B. D. Harrington, Tacoma General Hospital, Tacoma.
C. P. Larson, Tacoma General Hospital, Tacoma.
A. L. Balle, Providence Hospital, Seattle.

Northwest Medicine (Publication) (Nominated by Board of Trustees, elected by House of Delegates for 1 year term)
James M. Bowers, Stimson Bldg., Seattle, Chairman.
R. N. Hamblen, Medical Dental Bldg., Spokane.
S. F. Herrmann, Medical Arts Bldg., Tacoma.

Public Health and Sanitation (Appointed by President for 3 year term, one member to be appointed annually)
B. F. Francis, Cobb Bldg., Seattle..........1942
D. G. Evans, Smith Tower, Seattle, Chairman..........1943
C. J. Johannesson, Walla Walla..........1944
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Public Laws (Consists of President, Chairman of Public Relations Committee and three members elected by the Board for 3 year term, one member to be elected annually)
H. E. Rhodehamel, Med. Dent. Bldg., Spokane..........1942
W. B. Penney, Medical Arts Bldg., Tacoma, Chairman..1943
I. A. Weichbrodt, Med. Dent. Bldg., Seattle..........1944
F. H. Douglass, 1008 Summit, Seattle (Ch. Pub. Rel. Com.)
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Public Relations (Appointed by Board of Trustees to serve during its pleasure)
F. H. Douglass, 1008 Summit Ave., Seattle, Chairman.
C. C. Goss, 1114 Boylston, Seattle.
Wilmot D. Read, Rust Bldg., Tacoma.
Edwin A. Nixon, 902 Boren Ave., Seattle.
John H. O'Shea, Old National Bank Bldg., Spokane.
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Resettlement (Appointed by President for 1 year term)
Wilmot D. Read, Rust Bldg., Tacoma, Chairman.
Joseph E. Bittner, Jr., Larson Bldg., Yakima.
J. Reid Morrison, Medical Bldg., Bellingham.
Glenn E. Stevens, Okanogan.
David J. Lawson, Mt. Vernon.
J. L. Greenwell, Pasco.
L. C. Miller, Wenatchee.
J. T. Rooks, Walla Walla.
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Scientific Work (Consists of the President, who serves as Chairman, Chairman of Executive Committee, and three members elected by Board of Trustees for 3 year term, one to be elected annually)
G. W. Cornett, 102 S. Naches Ave., Yakima (President.
R. L. Zech, Med. Dent. Bldg., Seattle (Chrmn, Exec. Com.)
S. F. Herrmann, Medical Arts Bldg., Tacoma..........1942
R. E. Mosiman, Stimson Bldg., Seattle..........1943
J. W. Lynch, Med. Dent. Bldg., Spokane..........1944

Social Hygiene (Appointed by President for 1 year term. Subcommittee to Committee on Public Health and Sanitation)
W. Ray Jones, Fourth and Pike Bldg., Seattle.

State Planning Council Health Committee (Appointed by President for 1 year term)
H. E. Rhodehamel, Med. Dent. Bldg., Spokane, Chairman.
C. W. Knudson, Medical Dental Bldg., Seattle.
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Study of Medical Care (Appointed by President for 1 year term)
A. P. Duryee, Med. Dent. Bldg., Everett, Chairman.
W. B. McCreery, Fidelity Bldg., Tacoma.
A. H. Peacock, Stimson Bldg., Seattle.
F. J. Clancy, Cobb Bldg., Seattle.
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

Tuberculosis (Appointed by President for 1 year term)
J. E. Nelson, Med. Dent. Bldg., Seattle, Chairman.
L. P. Anderson, Elma.
S. L. Cox, 1117 N. 77th St., Seattle.
F. B. Exner, Medical Dental Bldg., Seattle.
R. E. McPhail, Lakeview.
F. S. Miller, Medical Dental Bldg., Spokane.
R. M. Stith, Fourth and Pike Bldg., Seattle.
L. G. Woodford, Medical Dental Bldg., Everett.
H. L. Hull, Larson Bldg., Yakima.
B. F. Francis, Cobb Bldg., Seattle.
J. F. Steele, Medical Arts Bldg., Tacoma.
K. M. Soderstrom, Smith Tower, Seattle.
G. W. Cornett, 102 S. Naches Ave., Yakima (ex officio).

MEDICAL NOTES

Bremerton Benefits in Will. The city of Bremerton will be the sole beneficiary of the estate of Mr. and Mrs. Benjamin F. Harrison. Announcement of wills to that effect was made recently. The Harrisons, whose property includes a majority of stock of the Olympic Hospital, have requested the city to take over control of that portion of the estate immediately. The city of Bremerton plans to assume management of the hospital at once and expects to build a $90,000 addition in the near future.

Official Position. Russell H. Wilson has taken over the Kitsap County Health Department after Harold M. Graning, former head, was assigned to the Plague Laboratory of the United States Public Health Service at San Francisco.

Consulting Staff Organized. Clark County has reorganized the County Physician's Service, with a majority of the physicians in the county to cooperate with Lyle Ham, County Medical Director. A rotating service is planned so that twelve physicians will be on call as consultants for a period of three months, following which twelve others will take over.

Cowlitz Hospital Expands. Contract was let in September for a forty bed addition to Cowlitz General Hospital. It is expected that the project will cost approximately $60,000.

OBITUARIES

Dr. Leonard H. Jacobsen, of Seattle, died October 4, aged 60 years. He had been ill for the past year. He was born in Minnesota, and received his medical degree at the University of Minnesota Medical School at Minneapolis, graduating in 1905. He came to Washington two years later and settled at Stanwood. He practiced urology in Seattle for twenty-five years.

Dr. Wallace Henry Carver, formerly of Yakima, died October 5 at the Veterans Hospital at Sawtelle, California, aged 66 years. He received his medical degree from the University of Colorado School of Medicine at Denver in 1902 and started to practice immediately in Yakima. During the first World War he served with the Army Medical Corps in France for two years. He had been retired since 1939 on account of a heart ailment.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

The regular monthly dinner meeting of Cowlitz County Medical Society was held at the Hotel Monticello, Longview, October 22, J. L. Norris presiding.

C. P. Larson, director of the clinical laboratory of Tacoma General Hospital, gave an illustrated lecture on "Scientific Clinic Detection," emphasizing the value of blood alcohol test in determining intoxication as applicable in traffic accidents and court proceedings.

B. D. Harrington, director of the pathologic laboratory of Tacoma General Hospital, gave an illustrated talk on "Treatment of Tumors and Cancer with Roentgen Therapy."

KING COUNTY MEDICAL SOCIETY

King County Medical Society held a meeting October 6 in the auditorium of Medical & Dental Building, Seattle, at 8:15 p. m., President Irvin A. Weichbrodt presiding. Applications for membership were read from C. G. Day, E. M. Grady, L. J. Rosellini, R. E. Dalton and E. M. Bergess.

Alex D. Campbell reported a case of leprosy, the first known in Seattle for four years. The eighteen-year-old male, from the age of four years until about three years ago, lived outside the United States in a leprosy region. Types of leprosy were discussed, and symptoms presented by the patient were considered. Arrangements were being made for his proper treatment.

Wilbur E. Watson discussed "Modern Treatment of Burns." In administering local treatment one must consider the causative agent, whether thermol, fire, boiling water, electric current, roentgen ray and radium, or chemical. Necessary procedures under each of these were discussed.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of Pierce County Medical Society was held at Tacoma on October 14, T. K. Bowles, president, presiding. Minutes of previous meeting were read and approved.

C. F. Engels made an announcement for J. F. Steele regarding health statistics which are being asked of physicians in order to complete the health conservation report.

A. L. Schultz made an announcement concerning the Home Defense setup and introduced Major Swartwood who gave a talk on "The Physician's Role in Tacoma's Home Defense Organization."

The scientific program was opened by a paper by H. W. Humiston on "Treatment of Gonorrhea." Discussion was by N. E. Magnussen, J. B. Robertson, Charles Pascoe and Carlisle Dietrich. The second paper was by L. E. Powers on "Treatment of Uncomplicated Syphilis." The third paper was given by Carlisle Dietrich, who discussed "Treatment of Neurosyphilis and Cardiovascular Syphilis." Drs. Powers' and Dietrich's papers were discussed by J. A. Benson.

Transfer of S. S. Thordarson from Snohomish County was unanimously passed. Applications of P. E. Bondo and W. J. Rosenbladt were read and referred to the Board of Trustees.

WALLA WALLA VALLEY MEDICAL SOCIETY

Walla Walla Valley Medical Society held a meeting at Walla Walla October 9. Ralph Dodson of Portland spoke on the subject "Preparedness from the Surgical Standpoint." His paper was very complete, showing us the problem that we may have to meet at any time. John Kahl, Walla Walla County Health Officer, spoke on the subject of "Preparedness from the Public Health Standpoint."

WASHINGTON OBSTETRICAL ASSOCIATION

Spokane obstetricians were pleasing hosts to Washington State Obstetrical Association at the regular fall meeting held in the Davenport Hotel October 3. The morning session was devoted to reading of carefully prepared, thoroughly scientific papers on various obstetric subjects. Each one presented some phase of recent investigation realtive to conception and gestation, with emphasis on endocrine effects. Albert W. Holman of Portland, guest speaker, summarized each paper briefly, a verbal abstraction of such clarity that it added much to the value of the meeting.

Following lunch and the business meeting, twenty-three maternal mortality questionnaires, all particularly related to infection, were studied quite minutely. There were four rather outstanding reasons given for these maternal deaths:

1. More deaths occurred subsequent to cesarean section. Practically all were the classic operation.
2. A high percentage of these deaths occurred late, 8-32 days postoperatively.
3. Many in the opinion of the Association were not preventable.
4. There was a striking lack of cooperation of the patient. It was repeatedly true that she had no prenatal care or almost none.

Dr. Holman's paper on "Chorioepithelioma and Mole Pregnancy" was a particularly excellent continuation of one offered by the late Dr. Matthieu two years ago, their joint effort now being consummated in this interesting condition. In the evening Dr. Holman's subject, "Toxemias of Pregnancy," was not considered from a general viewpoint, but the risk entailed by pregnancy in a woman with kidney disease. He described the functions of the glomeruli and tubules pointing out the effects of toxemias on these instruments of secretion.

STATE DEPARTMENT OF HEALTH

Personnel Leaving the Department. Kenneth Soderstrom, Chief of Tuberculosis Control, left the Department on October 19 to enter private practice in Seattle. He had received one year's training in public health at Johns Hopkins under this Department's program of staff training. Dr. Soderstrom was largely responsible for development of the program of tuberculosis control of the Department.

Paul Seufer, Assistant Public Health Engineer, was called to active naval duty and left the Department on October 7. While with the Department, he had been granted a leave of absence to serve with the U. S. Public Health Service in that agency's stream pollution survey of the Ohio River Basin.

During 1941 the Department lost four other members of its technical staff. These were called to active service in the Navy. They were the Assistant Director of the State Department of Health and three members of the Division of Public Health Engineering of the Department. Qualified replacements are increasingly difficult to find.

Merit System for the Department. The State Department of Health has joined with the State Department of Social Security and the State Department of Unemployment Compensation and Placement in a joint merit system. Rules and regulations applicable to all three departments have been completed and submitted to the proper federal authorities for their approval. The first series of merit system examinations have been announced by the State Personnel Board.

Study on Tuberculosis Care. The initial survey and analysis of tuberculosis care in the State of Washington has been completed. As of January 1, 1941, there are 788 beds for care of tuberculosis in county and city tuberculosis sanatoria. There are 157 additional beds available for tuberculosis care in federal hospitals in the state. There are 175 additional beds in the two private sanatoria located in Seattle.

Counties without their own sanatoria necessarily must hospitalize their tuberculosis cases in other public or private sanatoria. At times funds are limited and do not seem to permit of expenditure for such hospitalization, although beds may be available for such care. Were funds more freely available, it appears there would be insufficient beds for hospitalization of all cases. Cost per patient day of hospitalization of tuberculosis cases in publicly owned sanatoria range from slightly over $2 to well over $3.

An index was established, by which counties could be classified. The following related factors were considered in the development of that index: population of the county, equalized assessed valuation of the county, average annual death rate from tuberculosis of the county for 1934-1940, and funds spent for tuberculosis care by the county for the fiscal year.

Encephalitis Study in Yakima Valley. This study was under the direction of the Hooper Foundation. The State Department of Health, Yakima County Health Department and State College at Pullman were the cooperating agencies within the state. An article appearing in *Science*[1] reports on the "Isolation of the Viruses of Western Equine and St. Louis Encephalitis from Culex Tarsalis Mosquitoes." In a personal communication from Dr. Hammon of the Hooper Foundation it is indicated that there will be completed a list of animals and fowl which serve as a reservoir of these viruses.

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[1] Isolation of the Viruses of Weestern Equine and St. Louis Encephalitis from Culex Tarsalis Mosquitoes. Science, 94:328-330, Oct. 3, 1941.

WOMAN'S AUXILIARY

At the State Medical convention at Seattle in August, the following state Auxiliary officers were elected:

President	Mrs. J. H. Berge, Seattle
1st Vice-President	Mrs. W. V. Frick, Dayton
Second Vice-President	Mrs. A. Skarperud, Aberdeen
Third Vice-President	Mrs. David Lawson, Mt. Vernon
Fourth Vice-President	Mrs. J. C. Brougher, Vancouver
Fifth Vice-President	Mrs. H. E. Wilson, Port Orchard
Sixth Vice-President	Mrs. Kay England, Yakima
Recording Secretary	Mrs. S. H. Tashian, Seattle
Treasurer	Mrs. Chauncey B. Jones, Everett
Corresponding Secretary	Mrs. H. B. Kellogg, Seattle

In her official capacity as president of the State Auxiliary, Mrs. Berge has been vsiting the county auxiliary units in Eastern Washington. She was accompanied by Mrs. Irvin Weichbrodt of Seattle who is the Bulletin Circulation chairman of the state. Mrs. Berge urged that "nutritional defense" be one of the main projects for the year, since the health of the people is the strength of the nation.

Twenty-five members of Walla Walla Valley Auxiliary greeted Mrs. Berge and Mrs. Weichbrodt at their October meeting. Mrs. J. W. Ingram, new president of the group, presided at the meeting following dinner.

In Spokane, on October 10, Mrs. Berge and Mrs. Weichbrodt were guests of honor of the Spokane Auxiliary at a tea at the home of Mrs. Carroll Smith with Mrs. James Cunningham, president, presiding.

Chelan County Auxiliary entertained Mrs. Berge and Mrs. Weichbrodt on October 11 at a luncheon meeting at the Cascadian Hotel, with the president, Mrs. Norman Bellas, presiding.

The slogan of the National Organization Committee this year is "Every Doctor's Wife in Health Defense." Since the first step in this health defense is organization, Mrs. Horace J. Whitacre of Tacoma, State Chairman of Organization, has contributed the following article:

OBJECTIVES OF WOMAN'S AUXILIARY

Our slogan: "An Auxiliary member for every married doctor in the Medical Association."

Our platform: 1. To interpret the aims of the medical profession to other organizations interested in promotion of health education.

2. To assist in the entertainment at the sessions of the American Medical Association.

3. To encourage friendliness among the families of the medical profession.

4. To do work approved by the Advisory Council of the American Medical Association.

Ten years ago the House of Delegates of Washington State Medical Association, in August, 1931, at Aberdeen, voted its approval of auxiliaries to the medical societies.

The Woman's Auxiliary to Washington State Medical Association was organized in February, 1932, and the state president, in her report to the national convention, held in New Orleans in May, 1932, listed the following twelve auxiliaries which were organized: King, Lewis, Pierce, Chelan, Cowlitz, Clark, Spokane, Whitman, Snohomish, Whatcom, Skagit and Grays Harbor, with a total membership of 422. In the ten years following, Yakima, Walla Walla, Klickitat, Kitsap and Thurston-Mason units were organized. During this same period, however, Lewis, Whitman, Klickitat and Thurston-Mason units withdrew from the state organization. The reasons given for their withdrawal were lack of interest in part of the doctors, also of their wives; irregular meetings of the doctors and territory difficult to traverse for their meetings.

With a potential membership of 1030 doctors' wives in the State of Washington, there was a membership of 708 in the medical auxiliary for last year which means that 69 per cent of the doctors' wives in the state are interested in problems pertaining to the medical profession, in promoting public interest in health education, and by being affiliated with the medical auxiliary are having an active part in America's "defense program."

Doctors of this great Northwest, we, the Auxiliary to the medical profession, make an appeal to you for a keener interest in and a better understanding of the possibilities for service that lie in your medical auxiliary. We are a service organization and stand at attention, ready to serve!

Mrs. George J. Vandenberg
Chairman of Press and Publicity

MEDICAL NOTES

Hospital to Open. New Sacred Heart Hospital at Idaho Falls will be opened to the public as soon as new equipment is installed. This is the former Spencer Hospital which has been taken over by the Franciscan Sisters.

High Bids Delay Tuberculosis Hospital. Bids for the conversion of Gooding College to a state tuberculosis hospital were nearly twice the sum appropriated for the work; $55,000 was appropriated, while the low bid was $93,085.

Dale H. Davies, formerly of Nebraska and more recently in active service at Fort Lewis, Wash., is now associated with Alfred Budge, Jr., of Boise.

SOCIETY MEETINGS

SOUTHWESTERN IDAHO DISTRICT SOCIETY

A meeting of Southwestern Idaho District Medical Society was held at the Owyhee Hotel, Boise, October 16. Forty-three members and guests were present.

W. C. Dreessen, Past Assistant Surgeon, U.S.P.H.S., Division of Industrial Hygiene, National Institute of Health, discussed "Industrial Hygiene Problems and Silicosis." Six officers from Gowan Field, Boise Air Base, were guests of the Society.

CLINICAL FORUM

PEDIATRIC PROBLEM

M. Y., age 3½ years. First seen in the office and sent to hospital the same day.

Complaints. Small purplish spots on neck and upper chest and anorexia for three or four weeks previously.

Past history. Well during first year, frequent colds and attacks of tonsillitis since then. Family history immaterial.

Present illness. Mother first noticed "many bruises over knees and legs" while he was bathing one evening about six weeks ago. These have continued but no significance given it by parents. During the past six weeks the child has developed an entirely different personality, changing from a happy, healthy boy to an extremely irritable nature, demanding his mother's presence and attention almost constantly. Because of the new baby in the home some of his complaints were put aside, it was felt that his personality changes were due to the change in the household routine. The mother remembers one recent (three weeks) bout of "intestinal flu." Since that time he has seemed to have had a fever at times.

Physical examination. Moderately well nourished and well developed boy of 3½ years. Rectal temperature 101.5°. Skin is of a pale lemon appearance, lips pale with dried blood on them. Gums spongy and bleeding slightly. Sclera normal; 15 to 20 small petechial purplish spots on neck and upper chest. E.N.T. negative except for chronically infected and enlarged tonsils. Heart and lungs negative. Abdomen slightly full with liver margin three finger breadths below costal margin. Spleen or other organs not palpable. No lymphadenopathy.

Hospitalization. On admission the fever was 101°. Varied between this and 102.5° during a four week stay.

Laboratory data: r.b.c. 2,800,000, Hb. 52 per cent, w.b.c. 20,000, segmented 8 per cent, lymphocytes 76 per cent, monocytes 4 per cent, lymphoblasts 12 per cent, platelets 75,000, bleeding time 15 minutes, coagulation time 5 minutes, prothrombin (quick test) 75 per cent of normal.

During four weeks in the hospital the above blood picture did not appreciably change except for increasing anemia which necessitated a total of nine transfusions at three to four day intervals. The platelet count rose to 175,000 on one occasion and the last differential showed a slight increase in immature forms of lymphocyte series. Total count never exceeded 20,000. Puncture wounds necessary for blood determinations, securing donors and transfusions, would in many instances bleed for many hours after. Others would show a dark purplish area the next day. Wrists and feet would swell from time to time and pain in the limbs would necessitate codein and barbiturates to obtain any sleep and comfort.

After five weeks the child is slightly improved with temperature lower but not normal and has been allowed to go home. The appetite is still very poor. No glands have appeared and the bleeding tendency is abating. The urine has been normal at all times.

What is your suggestion for diagnosis and treatment?

COMMENTS ON OBSTETRIC PROBLEM IN OCTOBER ISSUE

First commentator believes: From the history as given one feels inclined to censure the physician consulted. The patient's dates of final menstruation and detection of fetal movements indicate clearly that when she presented herself for prenatal care, April 16, she had already passed through 286 days since last menstruation. Allowing ten days to two weeks in the previous July for ovulation and fertilization, it is evident that on May 5 she was well over her reasonably expected date of delivery. Her doctor then should have taken seriously into consideration bringing on of labor. The fact that she was large, edematous, losing albumin and had a bad presentation complicated the picture.

Definite procedures should be (1) hospitalization; (2) endeavor to dislodge baby from transverse situation and produce a cephalic presentation; (3) rupture membranes, being especially concerned about a cord prolapse which is so likely to complicate transverse positions; (4) if for any reason a cephalic presentation cannot be obtained, rupture membranes and introduce a good sized bag; better, if cervix is sufficiently soft, bring a foot down and wait for labor; (5) instruct nurse to observe fetal heart tones at least every fifteen minutes. If any change appears, especially during a pain, reexamine for prolapsed cord.

A cesarean might be considered, but the fact that the pelvic canal had been repeatedly so well prepared for the passage of a large baby, even a breech, one would find it difficult to justify a radical procedure.

A second commentator says: It seems to me the patient was becoming toxic. At the age of thirty-seven she had certainly fulfilled her debt to society from a childbearing standpoint, being a para-x. Without knowing more of the details, I believe I would treat the toxemia first to get her in a surgical condition, and follow with a section and sterilization according to the recently published opinions of Dr. Eastman.

Comments have been received relative to problems presented in the Forum. More than one had said, "I always read them each month. They present situations I have to face often, and I find it helpful to read the discussions, learning in that way how other men treat their patients; also, how I can look after my own under similar conditions for their betterment."

It is encouraging to those responsible for this column to discover that the efforts exhibited have been of any assistance whatever in advancing or stimulating interest in maternal and child welfare. Comments of all kinds are solicited whether favorable or otherwise. Especially is it desired that those who are provoked to thought should write in their own experiences and therefore assist another who may be on the spot.

Outcome of this obstetric problem:

The patient was hospitalized May 26, and medical induction was started with castor oil, hot enema and pituitrin, minims two, every half hour. Great care was exercised to avoid rectal examinations and straining so that membrane would not rupture. Fairly good contractions were secured after eight hours. The baby was slowly rotated externally with pains and head engaged. At the end of twelve hours normal delivery of a living male, 9½ pounds, was secured. Postpartum course was normal.

BOOK REVIEWS

Essentials of General Surgery, by Wallace P. Ritchie, M.D., Clinical Professor, Department of Surgery, University of Minnesota Medical School. With 237 Illustrations. 813 pp., $8.50. The C. V. Mosby Co., St. Louis, 1941.

This volume is intended primarily for medical students and embraces the entire field of general surgery. It is designed to give an intelligent understanding of the subject so that the student can appreciate why certain procedures are done, and the principles involved in carrying them out. It is meant to be supplemented by lectures or specific reading, so it gives very little on the actual technic of surgical procedures.

By virtue of its comprehensiveness, clarity and conciseness, it will be of great value to any practitioner of medicine or surgeon who wishes to review the modern concepts of any particular subject, whether it be pruritis ani which is discussed in one-half page, or anesthesia which is a chapter of thirty pages. It is a very valuable book for the purpose for which it is designed and is heartily recommended.

David Metheny

Cerebrospinal Fever. By Denis Brinton. D. M. (Oxon), F. R. C. P. (Lond.). Physician in Charge of the Department for Nervous Diseases, St. Mary's Hospital, London, etc. 163 pp., $3.00. The Williams and Wilkins Co., Baltimore, 1941.

The author emphasizes the public health aspects of this disease, the importance of proper housing, especially in the army barracks, and elimination of crowded meeting places, theaters, dining halls, etc. He points out that the infection is systemic, traveling from nasopharynx through the blood stream to the meninges. A satisfactory account of pathology, symptomatology, diagnosis and differential diagnosis is given for both the typical form which constitutes 90 per cent of the cases, and the fulminating and chronic forms which make up the remaining 10 per cent. A large section is devoted to modern chemotherapy treatment which has entirely replaced serum therapy and repeated spinal drainages. Sulfapyridine is the treatment of choice with sulfanilamide as a possible alternative. Forty-six cases are reported admitted to the Royal Air Force Hospital during the 1940 epidemic. Only one patient died and he developed agranulocytopenia during the convalescent stage.

S. N. Berens

Cardiac Clinics. A Mayo Clinic Monograph. By Frederick A. Willins, B.S., M.D., M.S., in Med., Head of Section of Cardiology, Mayo Clinic, etc. Illustrated. 276 pp., $4.00. The C. V. Mosby Co., St. Louis, 1941.

This book is a collection of informal discussions on heart disease as they appear in the proceedings of the staff meetings of the Mayo Clinic. The case reports are actual records of patients who have been examined there. The purpose of these discussions is to bring to practitioners answers to their individual questions on the management and treatment of heart patients which cannot ordinarily be found in textbooks. All types of heart disease are discussed and the autopsy report when included is given in detail. It is an excellent volume which quickly solves many problems which occur in the daily practice with heart disease.

A. G. Friend

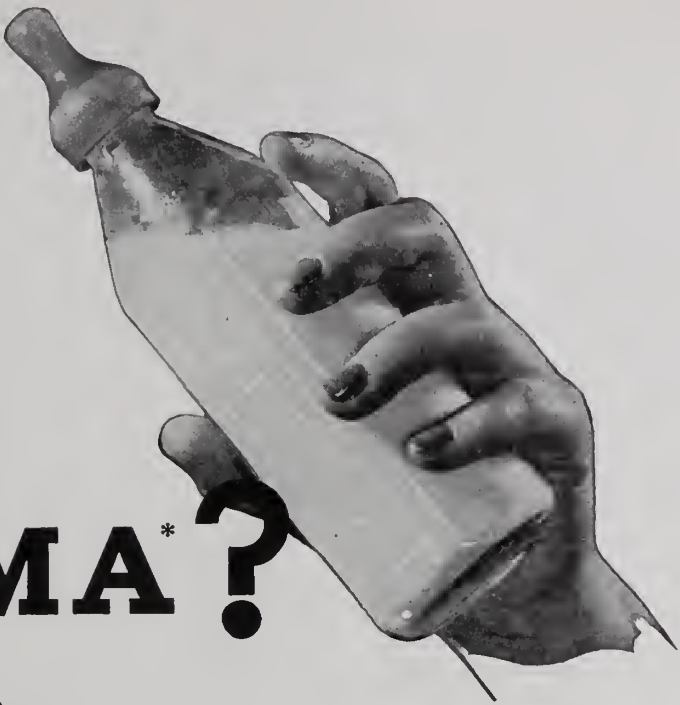
The 1941 Year Book of Physical Therapy. Edited by Richard Kovacs, M.D., Professor and Director of Physical Therapy, New York Polyclinic Medical School and Hospital, etc. 430 pp. $2.50. The Year Book Publishers, Inc., Chicago, 1941.

This book presents the yearly progress of Physical Medicine in the United States and abroad. Artificial fever treatment is the foremost newer procedure in which Americans have taken a leading role. American physicists have developed short wave apparatus which are exported to all parts of the world. During the past year principal progress has developed along the lines of hypothermy or crymotherapy as to its technic and therapeutic effects. Methods of fever therapy have been standardized, ultraviolet irradiation has had new applications.

Physical therapy methods are described under thermotherapy, electrotherapy, light therapy, hydrotherapy, mechanotherapy. Under applied physical therapy are presented detailed technics for treatment of specific physical conditions, with which every physician should be familiar who employs this form of practice.

Colwell's Daily Log for Physicians. A Brief, Simple, Accurate Financial Record for the Physician's Desk. Standard Log for Average Practice, $6. Double Log for Large Practices, $11. Colwell Publishing Company, not inc., Champaign, Ill.

This system of keeping office accounts is a simplified and easy method, developed especially for the physician's office. There is a page for usual daily entries of office calls



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DOCTORS DON'T BELIEVE IT, WHY SHOULD YOU? Facts and Fallacies about Health with Practical Guidance for the Layman. By August A. Thomen, M.D., with Introductions by Logan Clendening, M.D., and The Right Honorable Lord Horder, Physician in Ordinary to the King of England. 384 pp., $2.50. Simon and Schuster, New York, 1941.

The author of this volume has assembled an entertaining and instructive mass of questions pertaining to beliefs concerning health and sickness which he answers and explains in language adapted to nonmedical readers. The ten chapters deal wtih questions as to food, daily life, major illness, venereal diseases, cancer, common cold, asthma, mind and senses, birth, marriage, death and many others.

Here are a few illustrative questions: Which should be most thoroughly chewed, meat, bread, vegetables or fruit? What is acidosis? When does the eating of green apples cause stomachache? Why should you "take it easy" after forty? What should every woman know about beauty preparations? If you have sugar in your blood, does that mean you have diabetes? How common is the common cold, and what causes it?

If the chapters on veneral diseases and cancer were generally perused, much misinformation might be corrected by replies to questions like the following: How does a person get syphilis? What is a chancre? What is the Wassermann test? What is gonorrhea, and how prevalent is it? What causes cancer? Are there any effective remedies? Can a blow or injury cause cancer? The book teems with questions and sensible answers which are enlightening to the layman. It does not, however, deal with treatment nor offer therapeutic suggestions.

START TODAY YOUR GUIDE TO PHYSICAL FITNESS. By C. Ward Crampton, M.D., Major, Medical Reserve Corps, United States Army, etc. 224 pp. $1.75. A. S. Barnes & Co., New York, 1941.

The author states we Americans think we are fit, but we are not. The high school basketball team gets all the training while the others get the thrills. Hitler states "America is soft. It will be easy." We have our choice, strength or slavery.

The subject of this book is fitness, the attainment of which is facilitated by its contents. Seven exercises are described, each in a separate chapter, designated the stretch, pumping, kicking, churning, "N. E. W. S.," pep steps, the star gazer. Each is illustrated by suitable figures. They are for individual daily use, either in the home or gymnasium. "They will help to prepare you for the rough, tough and heavy work that is ahead of us."

NECROPSY. A Guide for Students of Anatomic Pathology. By Bela Halpert, M.D., Assistant Professor of Pathology and Bacteriology, Louisiana State University School of Medicine, etc., 75 pp. $1.50. The C. V. Mosby Co., St. Louis, 1941.

This booklet presents definite methods for postmortem examinations. The material is arranged in the sequence in which the necropsy is performed to facilitate correlation of observations with their recording. There are twenty sections, each devoted to examination of a definite part of the body with directions for details of each. By following direction described the postmortem will be facilitated.

SYNOPSIS OF DISEASES OF THE HEART AND ARTERIES. By George R. Herrmann, M.S., M.D., Ph.D., F.A.C.P., Professor of Medicine, University of Texas, etc. Second Edition. 468 pp., $5.00. The C. V. Mosby Co., St. Louis, 1941.

This second edition has been completely revised. It is arranged so that interest in cardiovascular diagnosis and treatment should be stimulated. It is an outline of the generally accepted facts and modern conceptions in cardiology. It contains a brief review of the various methods and instruments used in diagnosis of heart disease as well as an outline of the common cardiac ailments with their treatment. A special chapter on cardiovascular examination of men for military service is included. It is illustrated with drawings and photographs. A. G. FRIEND

SYNOPSIS OF APPLIED PATHOLOGICAL CHEMISTRY. By Jerome E. Andes, M.S., Ph.D., M.D., F.A.C.P., Director of Department of Health and Medical Advisor, University of Arizona, etc., and A. G. Eaton, B.S., M. A., Ph.D., Assistant Professor of Physiology, Louisiana State School of Medicine, New Orleans. With 23 illustrations. 428 pp. $4.00. The C. V. Mosby Co., St. Louis, 1941.

The primary purpose of this book is to provide a practical simple text on application of pathological chemistry to clinical medicine. It is not its purpose to set up biochemical laboratory analyses as superior to clinical observations. These should be used only to supplement clinical findings. After preliminary considerations there are chapters on glucose, urea, uric acid, creatine, creatinine, carbon dioxide, blood chlorides, hemoglobin, calcium, bilirubin, amino acids. Others consider cerebrospinal fluid, renal function and liver function tests, basal metabolism. None of these subjects are considered extensively but basic principles are briefly presented.

THE NEW INTERNATIONAL CLINICS. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. Volume III, New Series Four. 300 pp. $3. J. B. Lippincott Company, Philadelphia, Montreal, New York, 1941.

This instructive volume presents original contributions by distinguished members of the profession on topics of interest to every practitioner. Some of these relate to vitamin C deficiency, ulcer of lesser curvature of the stomach associated with early carcinoma, postoperative prognosis of cancer of the breast, relationship between malignant tumors and reticuloendothelial system. Clinics are reported on many timely topics and there is a review of recent progress.

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JOURNAL OF OREGON STATE MEDICAL SOCIETY, WASHINGTON STATE MEDICAL ASSOCIATION
AND IDAHO STATE MEDICAL ASSOCIATION
ISSUED MONTHLY BY NORTHWEST MEDICAL PUBLISHING ASSOCIATION
Office of Publication, 225 Cobb Building, Seattle, Wash.

Entered Mar. 14, 1903, at Post Office, Seattle, Wn., as Second Class Matter, under Act of Congress of Mar. 9, 1879.
Acceptance for mail at special rate of Postage provided in Sec. 1103, Act of Oct. 8, 1917, authorized July 31, 1918.

VOL. 40, NO. 12 DECEMBER, 1941 $2.00 per Year

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Reprints will be furnished by the printer according to the schedule of prices which accompanies the galley proofs submitted to the author. The order for reprints should accompany the returned galley proofs. The printer holds the type until the first of the following month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

CONFERENCE OF SECRETARIES AND EDITORS

The annual conference of secretaries of constituent state medical associations and editors of state association journals was held in the A. M. A. building at Chicago, November 14-15. Oregon State Medical Society was represented by its secretary, John R. Montague, while Vern W. Spickard, its secretary, represented Washington State Medical Association. Clarence A. Smith attended as editor of NORTHWEST MEDICINE. Nearly all states were represented by their presidents or secretaries, while sponsors for all state journals appeared to be present.

The program of these meetings includes Friday morning, afternoon and Saturday morning sessions, devoted to papers and addresses, while a dinner Friday evening covers matters pertaining to state association journals. The agenda of the meeting were devoted almost entirely to questions of medical preparedness, selective service problems and hospitalization. There was discussion of the vexed question of exempting hospital interns and deferment for later selective service. This question does not yet seem to have reached a definite determination. General Lewis B. Hershey, director of the selective service system, dwelt at length on rehabilitation of rejected draftees. The appalling number of rejections has demanded some alteration in regulations, with determination to rehabilitate large numbers of these men. The problem of rejection by army examiners of men who had been previously passed by local boards was recognized as a serious situation. It appears that regulations may be altered to relieve this conflict of results following local examinations. The forceful and important paper by General Hershey will soon be published in *The Journal of the A.M.A.*

One pleasing feature of these annual conferences is the opportunity for personal contact on the part of journal editors. It becomes continuously more evident that journals in all the states have to deal with similar problems, and it is a satisfaction to compare experiences and receive suggestions from fellow editors. The increasing efficiency of medical journals in all the states has been apparent during recent years. The quality of contents, general style of publication and standards of editorial writings have become conspicuous. The medical profession as a body has reason for satisfaction in the quality and usefulness of its medical journals.

DOCTORS AT WORK

The medical profession has a vivid recollection of the dramatized radio program broadcast a year ago depicting the doctor at his work. It described the youthful ambitions and difficulties of acquiring a medical education on the part of young Dr. Tom Riggs. It carried him through the period of early practice, portraying trials and experiences common to every young practitioner.

It is announced that this serialized story will be broadcast again beginning December 6, at 3:30 to 4 p.m. Mountain Standard time, or 2:30 to 3 p.m. Pacific Standard time. This series of broadcasts will resume the story with the marriage of Tom Riggs to his fiance, Alice Adams, depicting the life of a young doctor and his wife in time of national emergency in a typical, medium size American city.

This program is produced under the supervision of the Bureau of Health Education of the American Medical Association, of which W. W. Bauer is director. One of the pleasing features of last year's broadcast was the intriguing supplementary medical dissertation by Dr. Bauer, which was one of the most attractive portions of the program, and which will be continued this year. Scripts were prepared by William J. Murphy of the National Broadcasting Company, who will continue to function with this year's broadcasts.

EXPANSION OF CLINICAL FORUM

During the past six months a section in this journal has been devoted to the Clinical Forum, which has consisted of a brief report of a puzzling case in obstetrics or pediatrics, with an inquiry as to how the particular case would be treated by the reader. The following month replies were published concerning the case in the previous issue. This Forum was initiated and has been maintained by a group of obstetric and pediatric specialists. Criticisms and commendations have been reecived. There appears to be a general approval of this feature of the journal.

It has been proposed that this Clinical Forum might be expanded to include brief reports with subsequent comments in other specialties. If this were added, it would be necessary for someone to assume the responsibility of collecting the clinical reports and subsequent discussions, forwarding them in due time for publication. If this suggestion appeals to the readers, and anyone is willing to assume this responsibility, the Forum might be thus expanded.

Thus far reports and discussions have been published anonymously. It has been suggested that interest might be increased by inclusion of the name of each contributor. Whether this should be adopted will depend upon the wishes of the writers. It is suggested that those contributing to this section should express their opinions concerning inclusion of their names.

UROLOGY AWARD

One of the principal objectives of the American Urological Association is to encourage the study, improve the practice, elevate the standards and advance the cause of urology. One method of obtaining these objectives is offering a reward for effective scientific work. The following announcement is intended as a stimulus to attract the energies of young urologists who are particularly interested in promoting the purposes outlined by this organization:

> The American Urological Association offers an annual award not to exceed $500 for an essay (or essays) on the result of some specific clinical or laboratory research in urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deems none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.
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> Essays must be in the hands of the Secretary, Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Conn., on or before April 1, 1942.

CHRISTMAS SEAL SALES

In no branch of medical practice has there been a more striking reduction in morbidity and mortality during the past generation than has been exhibited in the various forms of tuberculosis. The older generation has a vivid recollection of the hopeless situation of patients afflicted with this disease, in striking contrast to the situation today when tuberculosis is recognized as curable in a large proportion of its victims. Methods of treatment have become standardized. No longer need the patient seek a climate which was formerly supposed to be essential for relief of the disease. He can be treated as successfully in his home town as in any other section of the country. It is well known that the most important factor for relief is early diagnosis. If recognized at a sufficiently early stage, cure may be anticipated.

Since a large proportion of tuberculous patients have not financial resources at their command to provide for the necessary period of hospitalization and proper attendance, it is necessary to have institutions where many of them can be cared for at a limited expense or without expenditures on their part. Hence the necessity for accumulating adequate funds to carry on this work. It was a happy inspiration to institute the annual sale of Christmas Seals scheduled in all parts of the country, which provides a sufficient income to carry on the work during the ensuing year. Everyone interested in the suppression of this universal disease should participate in the purchase of these seals and doctors should encourage their patients and friends to join in promoting this beneficial enterprise.

NEW MEDICAL OFFICER EXAMINATION ANNOUNCED BY CIVIL SERVICE COMMISSION

The Government is faced with a critical need for physicians to serve as Associate Medical Officers in the Federal civil service in such agencies as the Veterans Administration, the U. S. Public Health Service, the Indian Service and others. In August of 1940 the Civil Service Commission announced an examination (Announcement No. 101) to fill Medical Officer positions of various grades in the Government service. This examination has been closed and reannounced (Announcement No. 130) with certain modifications. Applications will be accepted until further public notice.

The examination covers three grades: Associate Medical Officer, $3,200 a year; Medical Officer, $3,800 a year and Senior Medical Officer, $4,600 a year. Applicants for the Medical Officer grade must have graduated from a medical school (Class A) since May 1, 1920, and for the Associate grade, since May 1, 1930. No specified time limit is set for graduation for the Senior grade.

No written test is required. Applicants are rated upon their education and experience. Senior Medical Officers must have had professional experience in one of the following: aviation medicine, cardiology and public health (general). Qualifying optional branches for the Medical Officers and Associate Medical Officers include: aviation medicine; cardiology; dermatology; eye, ear, nose, and throat (singly or combined); general practice; industrial medicine; intestinal medicine and diagnosis; medical pharmacology; neuropsychiatry; pathology; bacteriology, and roentgenology (singly or combined); public health; surgery; tuberculosis; urology; and cancer. The maximum age limit for all grades has been raised to *fifty-three.*

Because of the demand, persons who can qualify for the Associate Medical Officer grade are urged to apply. Applicants for this grade need not have had experience other than one year of interneship, general rotating, or in an optional branch. For this grade, applications will be accepted from persons who are now serving but who have not yet completed interneship, but they must complete their interneship before entering on duty.

Announcements and application forms may be obtained at any first- or second-class post office, or from the Civil Service Commissioner, Washington, D. C.

ORIGINAL ARTICLES

DIFFERENTIAL DIAGNOSIS AND TREATMENT OF JAUNDICE*

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DIAGNOSIS

The differential diagnosis of jaundice, and particularly the differentiation of the obstructive forms from those due to liver cell injury, is a problem which is frequently encountered by the practitioner. It has been estimated that a careful and experienced clinician can diagnose the cause of jaundice at the bedside in about 80 per cent of cases. In many instances, however, great difficulty may be encountered in making the diagnosis and detailed laboratory procedures and the opportunity to observe the patient for a prolonged period may be necessary.

Features of the differential diagnosis between these two types of jaundice are outlined in the following table:

DIFFERENTIAL DIAGNOSIS OF HEPATOCELLULAR AND OBSTRUCTIVE JAUNDICE[1]

	Hepatocellular Jaundice	*Obstructive Jaundice*
AGE	Catarrhal jaundice, the commonest form, a disease of youth.	More common in middle or later life.
HISTORY	In some instances history of exposures to hepatotoxic substances. In catarrhal jaundice, history of other cases in vicinity.	In stone, history of previous attacks and of associated digestive distress. In cancer insidious onset, nonremitting jaundice.
PAIN	Usually absent.	"Biliary colic" with stone. Cancer may be painless but not unusually associated with severe constant pain.
ITCHING	Usually absent in milder hepatocellular icterus.	May be severe, particularly with superimposed hepatic injury.
BILE IN DUODENAL CONTENTS OR FECES	Usually present, although there may be a temporary suppression of bile flow at onset.	Absent in complete obstruction.
BILE IN URINE	Present.	Present but in greater quantity in proportion to serum bilirubin level.
SPLENIC ENLARGEMENT	Frequent.	Rare.
VAN DER BERGH REACTION	Usually direct.	Direct.
URINE UROBILINOGEN	Present in variable quantities, depending upon such factors as liver dysfunction, intrahepatic biliary obstruction and hemolysis.	Absent in complete obstruction; variable quantities in partial obstruction.

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*Read before the Sixty-seventh Annual Session of Oregon State Medical Society, Portland, Ore., Sept. 2-5, 1941.

[1] Bockus, H. L. and Tumen, H. J.: The Cyclopedia of Medicine, Vol. 8, page 168, Philadelphia, F. A. Davis Co., 1939.

BLOOD CHOLESTEROL	
Total cholesterol variable, never markedly increased. Percentage of cholesterol esters decreased.	Total cholesterol increased usually in proportion to bilirubin. Percentage of esters normal.
GALACTOSE TEST	
Usually positive, if performed early in jaundice.	Negative.
BLOOD PHOSPHATE	
Normal or only slightly elevated.	Increased, usually in proportion to bilirubin.
HIPPURIC ACID SYNTHESIS	
Decreased.	Normal in absence of secondary parenchymal liver damage.

The age incidence of the various forms of jaundice is an important diagnostic point. Catarrhal jaundice is seen predominantly in young people. Gallstones and their resultant biliary obstruction are encountered chiefly in middle life and malignant biliary obstruction is characteristically seen in older individuals and particularly in males. Such statements must, however, not be considered as being hard and fast. Hepatocellular injury can occur at any age and gallstones and even carcinoma occasionally afflict the young. Statements as to the age incidence of icterus must, therefore, be taken as generalizations.

In taking the history of a patient with icterus, specific questions must be asked as to the use of possible hepatotoxic drugs. The patient should be questioned about administration of "shots for the blood" and must be asked whether he has taken any medicine for rheumatic pains. If this is not done, cases of arsenical or cinchophen hepatitis will be missed. Contact with other cases of icterus should be inquired about because catarrhal jaundice is frequently mildly epidemic and this may furnish a valuable diagnostic clue.

Because pain occurs so rarely in association with jaundice due to liver cell injury, it is a valuable diagnostic point. Jaundice associated with severe right upper abdominal pain is ordinarily considered characteristic of common duct obstruction due to stone, and a history of recurrent attacks of this type, particularly in a woman and especially if the attacks occur during or shortly after pregnancy, near the menses or during the menopause, justifies a clinical diagnosis of gallstones. The typical so-called biliary colic, which occurs in about 75 per cent of patients with jaundice due to stone, may be described as pain that begins in the right upper quadrant, gradually reaches a plateau of great severity and, as it does so, radiates around the right costal border to the scapula. It may last for a number of hours unless an opiate is given. There may be associated chills and fever.

It must be realized that there is an absence of pain in about 5 per cent of cases of icterus due to gallstones, and in an additional 20 per cent the pain which occurs is not of the classic variety just described. It should also be noted that we must revise our older conception which considered jaundice due to malignant biliary obstruction as being painless. Recent surveys stress the very high incidence of pain as a symptom of carcinoma of the pancreas.[2] This pain may occasionally occur in paroxysmal attacks similar to those caused by stone. More frequently the pain is a steady, boring, epigastric discomfort, completely unrelated to gastrointestinal function and not easily relieved except by opiates. The development of such a pain in a middle aged man should always arouse suspicion as to the presence of a malignant pancreatic lesion, particularly if there are marked and rapid weight loss, slight hyperglycemia and extreme nervous irritability. Such symptoms may be present for some time before jaundice appears.

Another important diagnostic point is the character of the icterus itself, its duration, intensity and constancy. Jaundice which is most severe and persistent is that due to malignant obstruction. This rarely subsides or fluctuates after its onset. Jaundice of chronic liver injury is also apt to be prolonged and intense, though it is not as marked as that due to cancer and has more tendency to wax and wane during its course. Icterus due to stone, on the contrary, is generally of short duration, rapidly reaching a maximum of intensity and usually subsiding rapidly. This is also true of icterus of so-called catarrhal jaundice which usually reaches its peak in about a week and then gradually disappears.

Two features of the physical examination which may be of value in arriving at a diagnosis should also be mentioned. Palpation of a nontender, distended gallbladder in a patient with jaundice is quite characteristic of malignant biliary obstruction, although it must be borne in mind that in some cases of carcinoma of the head of the pancreas the gallbladder may not be palpable. The size of the spleen is also an important diagnostic point. Splenic enlargement is almost never found in patients with simple obstructive jaundice. In acute and transient icterus splenic enlargement is usually indicative of acute liver cell damage. In more chronic cases a palpable spleen is characteristic of the congenital type of hemolytic jaundice or of icterus arising on the basis of long-standing liver diseases such as cirrhosis.

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[2] Franco, S. C.: Carcinoma of Head of Pancreas, Am. J. Digest Dis., 8:65-69, March, 1941.

Time does not permit detailed attention to all of the details of differential diagnosis. I wish, however, to discuss the diagnostic value of some of the liver function tests in general use. Review of the literature indicates that there are great differences of opinion as to the diagnostic value and accuracy to be ascribed to these tests. The limitations of liver function studies are frequently emphasized and we are told that factors such as the tremendous reserve power of the liver, the marked speed with which it regenerates and the great multiplicity of its functions destroy the usefulness of the tests recommended. For the purposes of this paper, my discussion of liver function tests is limited largely to their use in differential diagnosis between obstructive jaundice and that due to primary liver injury. It is my firm conviction that, when used for this purpose, certain liver function tests have tremendous value, if due regard is paid to their limitations and if the same objective viewpoint is used in interpreting them as in interpretation of other laboratory procedures.

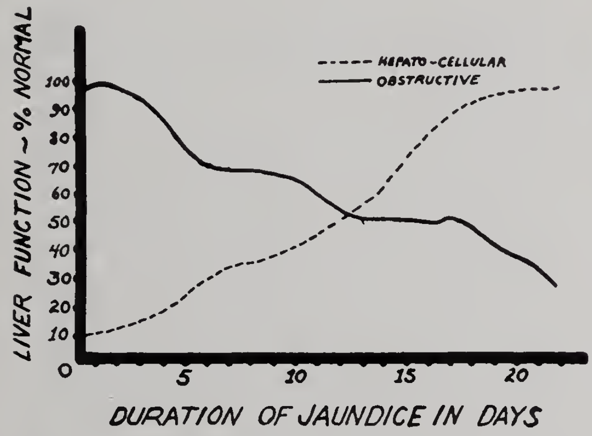

Fig. 1. Illustrates possible effect of passage of time on liver functions in hepatocullar and obstructive jaundice.

It is probable that many of the errors in the use and interpretation of liver function tests arise from a failure to consider the all-important influence of the duration of icterus on results of the tests, and failure to realize how rapidly hepatic function may change during the course of jaundice, no matter what its origin. If the icterus has developed as a result of primary liver disturbance, liver function may improve rapidly after the initial injury. If, on the other hand, the jaundice was due to an obstructive process, secondary hepatic injury and dysfunction may soon supervene. The effect of these changes can be illustrated by a diagram (fig. 1).

In one type of jaundice, the hepatocellular, there is usually marked liver dysfunction early in the course of the icterus with a tendency to lessening of the dysfunction with passage of time, as improvement takes place. In obstructive jaundice hepatic function is generally satisfactory at the onset but may gradually fail, if biliary obstruction persists. Function tests done early in the course of these two cases can be expected to show, in most instances, this difference in the status of the liver and will have some diagnostic value. If, however, time is allowed to pass before doing these tests, we may reach the point at which, because liver function has improved in the case with hepatocellular icterus but lessened in that with obstruction, the functional capacity of both livers may be approximately the same. Tests done at such a time may be of little diagnostic value. I wish to emphasize the fact that all liver function tests have their greatest value in the differential diagnosis of jaundice, if done early in the course of the jaundice. It must also be understood that tests of hepatic function represent but one phase in diagnostic procedures and their results should always be considered in light of the clinical features of the case under consideration.

Of various tests which are available for use in the differential diagnosis of jaundice I would like to refer first to the galactose tolerance test. This test, which was first introduced by Bauer in 1906, is probably of little value in recognition of chronic low grade liver injury. Many investigators have noted, however, the extreme accuracy of this test in recognition of acute diffuse liver damage.[3] The technic is extremely simple and available to any practitioner. The patient is given a 40 Gm. dose of galactose and the urine is collected for a five hour period. Quantitative sugar determinations are performed. The normal individual will excrete less than 3 Gm. of sugar, and usually less than 2 Gm. in that time. An excretion of more than 3 Gm. is considered a positive response. It is now well established that the galactose test is negative in about 95 per cent of obstructive jaundice but that it is positive in from 80 to 90 per cent of cases of jaundice when this is the result of liver cell injury. We are now convinced, however, that if this test is to be of definite diagnostic value in differentiating these two types of jaundice, it must be used early, that is, within two weeks of the onset of icterus. The regenerative power of the liver is so great that enough new hepatic cells may develop, even in a badly damaged organ, to permit it to utilize galactose normally. We believe that a negative galactose test in patients, whose icterus has been present for more than two weeks, has little diagnostic value since it may occur even with serious liver damage. If, however, the test can be done shortly after the onset of the icterus, it does possess great diagnostic accuracy, particularly if positive.

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[3] Tumen, H. J. and Piersol, G. M.: Value of Alimentary Galactosuria in Diagnosis of Jaundice. Ann. Int. Med., 7: 311-329, 1933.

A number of workers, most recently Althausen,[4] have suggested that the galactose test be improved by giving the sugar intravenously and determining its disappearance from the blood. The technic may increase the accuracy of the test in determining chronic liver disease but we are not convinced that it enhances the value of the test in determining the presence of acute hepatocellular jaundice. The extreme simplicity of the older method and its availability to the general practitioner justify retaining it for the specific purpose we are discussing.

Other function tests of value in differentiating the types of icterus require somewhat more intricate laboratory methods. The level of blood cholesterol may be of considerable diagnostic significance. The concentration of this substance in the blood is influenced, of course, by numerous factors. Since one of the pathways of cholesterol excretion is through the bile passages, it is natural that biliary obstruction should be followed by elevation of the cholesterol and we feel extremely hesitant in concluding that a given case of icterus is obstructive in origin, if the total cholesterol is normal or only slightly elevated. It is usually true that a normal total cholesterol level in a case of jaundice is evidence against the icterus being obstructive in origin.

In recent years a great deal of attention has been paid to the amount of cholesterol present in the blood in the form of the ester.[5,6] Normally the esterified cholesterol represents 60-80 per cent of the total amount present. Since the cholesterol ester is thought to be formed in the liver, a decrease in the ester percentage is considered to indicate hepatic injury. In severe liver disturbance the ester percentage does fall considerably, even to zero. Determination of the cholesterol ester concentration has, therefore, been recommended for use in differential diagnosis of icterus. Since many workers have shown that cholesterol esters become lowered even in obstructive jaundice if liver dysfunction supervenes, they believe that determination of the cholesterol ester percentage does not have great diagnostic value but may be useful in prognosis. It is felt that a persistently low or dropping ester level indicates progressive liver injury and, therefore, is of poor prognosis. A rising ester percentage, on the other hand, is considered to indicate liver regeneration and to be of favorable import.

Diagnostic use has also been made of the marked changes in blood phosphatase levels which occur in many cases of jaundice.[7,8] Using the method of Bodansky, the normal level of phosphatase in the blood is 4-6 units. In obstructive jaundice there is marked increase in these enzymes and readings over 10 units are the rule. It has been our experience that readings under 10 are quite rare in obstructive jaundice and we believe that this fact has diagnostic value. We have concluded that a diagnosis of obstructive jaundice is usually not justified in the absence of definite increase in the blood phosphatase.

Another test which has great diagnostic value is the hippuric acid test of Quick.[9,10] This test depends on the ability of the liver to synthesize hippuric acid by combining the benzoate radicle with glycine. It is done by determining the amount of hippuric acid excreted in the urine after administering a fixed dose of sodium benzoate, either by mouth or by vein. The test is easily performed and has much to recommend it. In the presence of liver damage there is a sharp decrease in the amount of hippuric acid excreted. For this reason the test is usually positive in jaundice due to liver cell injury and negative in early obstructive icterus. If, however, biliary obstruction has been present for some time and secondary liver damage has developed, the hippuric acid excretion falls. The test is, therefore, of great value in determining the presence of liver injury as a complication of biliary obstruction.

Other laboratory procedures are also extremely useful in the differential diagnosis of various forms of jaundice. Persistent absence of urobilinogen from the urine, for instance, is extremely characteristic of icterus due to malignant biliary obstruction.[11] Determination of the serum lipase may also have diagnostic significance since this enzyme has been found to be elevated in a very high percentage of cases of pancreatic cancer.[12] We have also been greatly impressed with the information to be gained by examination of bile obtained by nonsurgical biliary drainage in studying icteric patients. Finding cholesterol crystals and calcium bilirubinate in the bile is quite characteristic of the presence of gallstones and aids considerably in making this diagnosis. Finally, it must be stated that one laboratory procedure which was formerly thought to be very important in differential diagnosis of icterus is now known to be of very little value for that purpose. The qualitative van den Bergh test gives a direct reaction in both obstructive jaundice and that due to liver cell injury. For that reason it cannot be used in differentiating these two. The chief use of the van den Bergh test at present is quantitative, to measure the degree of jaundice by determining the concentration of the bilirubin in the serum.

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[4] Bassett, A. M., Althausen, T. L. and Coltrin, G.: New Intravenous Galactose Clearance Test for Differentiation of Obstruction from Parenchymatous Jaundice, Proc. Soc. Exper. Biol. Med., 45:405-407, Oct., 1940.

[5] Epstein, E. Z.: Cholesterol Metabolism and Liver Disorders, Rev. Gastroenterol., 4:12-19, March, 1937.

[6] Greene, C. H., Hotz, R. and Leahy, E.: Clinical Value of Determination of Cholesterol Esters of Blood in Hepatic Disease, Arch. Int. Med., 65:1130-1143, June, 1940.

[7] Rothman, M. M., Meranze, D. R. and Meranze, T.: Blood Phosphatase as Aid in Differential Diagnosis of Jaundice, Am. J. M. Sci., 192:526-535, Oct., 1936.

[8] Gutman, A. B., Olson, K. B., Gutman, E. B. and Flood, C. A.: Effect of Disease of Liver and Biliary Tract upon Phosphatase Activity of Serum, J. Clin. Investigation, 19: 129-152, Jan., 1940.

[9] Quick, A. J.: Clinical Value of Test for Hippuric Acid in Cases of Disease in Liver, Arch. Int. Med., 57:544-556, March, 1936.

[10] Quick, A. J.: Intravenous Modification of Hippuric Acid Test for Liver Function, Am. J. Digest. Dis., 6:716-717, Dec., 1939.

[11] Watson, C. J.: Studies of Urobilinogen, Arch. Int. Med., 59:196-231, Feb., 1937.

TREATMENT

Since jaundice is simply a symptom, its treatment is, of course, the treatment of the underlying cause. In case of obstructive jaundice this usually implies an attempt at surgical removal or correction of the cause of the obstruction. Although there is no such simple and direct therapy for icterus due to primary liver cell disease, definite principles of treatment can nevertheless be stated. Despite the fact that there are tremendous variations in the etiology and severity of those cases of jaundice in which the underlying mechanism is injury to hepatic cells, all of these cases do have in common the fundamental pathologic feature of liver damage, and for that reason treatment of all of them is based on the same general features.

The first step in management of all instances of hepatocellular jaundice is removal, if that is possible, of the toxic agent, so that the liver may be spared further damage. Unfortunately, the cause of the most common form of icterus due to liver cell disease, so-called catarrhal jaundice, is still unknown, so that we can only theorize as to methods of combating it. Many believe, however, that whatever the etiologic agent producing catarrhal jaundice may be, it enters the body through the gastrointestinal tract. For that reason it is frequently recommended that purgatives such as calomel or castor oil be given to combat the constipation which may be an early symptom of this type of icterus, in order to remove possible hepatotoxic substances from the bowel. It is also recommended that nothing be done to check the diarrhea which may occasionally be a prodromal symptom of the jaundice, and that no opiates or astringents be administered for the diarrhea until such initial symptoms as nausea, headache or fever have subsided.

When hepatitis results from use of one of the drugs toxic to the liver, the first step in treatment is, of course, immediate stopping of its administration. In the case of cinchophen hepatitis, there are usually no prodromal manifestations and the first indication of trouble is generally the appearance of the icterus itself. Arsenical jaundice, on the other hand, is often preceded by other symptoms and recognition of these affords an opportunity to discontinue the arsenical before serious liver damage has been done. Although hepatitis complicates arsenic therapy in only about 1 per cent of cases, the effects may be so serious that every step should be taken to guard against it. It must be urged that every patient should be questioned before every injection of an arsenical as to the occurrence of fever, nausea or vomiting or diarrhea following the previous injection. His sclerae should be examined for slight icterus and he should be questioned about the color of the stool and urine. If these precautions are taken, instances of mild liver injury may be discovered and the patient spared the increased damage that is likely to follow further use of the drug at that time. It is a good policy to omit the proposed dose of arsenic until the importance of an apparently mild reaction can be evaluated properly.

With the use of any drug that is potentially dangerous to the liver it must be borne in mind that an important prophylactic step is maintenance of the patient on a diet that will afford the liver maximum protection. There is now available ample clinical and experimental evidence to indicate that the likelihood of liver damage is least, if the patient is given a diet high in carbohydrates and adequate in protein. It is at least possible that the custom of giving arsenicals to fasting patients and prescribing cinchophen to patients kept on low carbohydrate, low calory diets as part of their treatment for arthritis, may contribute to development of some of the hepatic reactions to these drugs.

In the actual treatment of acute liver cell injury our chief purpose is to use those measures that will encourage hepatic regeneration and alleviate the liver damage already done. It is fortunate that the liver possesses such marvelous powers of regeneration. If the offending agent is not too overwhelming and if the liver receives adequate support, there is, therefore, a good chance that recovery will take place.

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[12] Johnson, T. A. and Bockus, H. L.: Diagnostic Significance of Determination of Serum Lipase, Arch. Int. Med., 66:62-77, July, 1940.

Rest is important and it is necessary to keep the patient in bed until the acute phases of the illness are over. As the sheet-anchor of all treatment, however, it is necessary to emphasize the therapeutic importance of the patient's diet. For some time it has been believed that a high glycogen reserve in the liver aids in protecting that organ from injury. More recently it has been established that ample proteins are also needed for satisfactory hepatic regeneration. We can say very definitely that the liver can withstand injury best and regenerate most rapidly, if the patient receives a diet adequate in both carbohydrates and proteins and of sufficient caloric value. In the average case this means that he should receive a diet which will give him at least 400 Gm. of carbohydrates and about 100 Gm. of protein daily. The fat content of the diet should be kept at a minimum in order to avoid deposition of fat in the liver and because fat digestion is usually faulty in jaundiced individuals. If the patient can take his food by mouth, administration of such a diet is fairly simple since the carbohydrates can be given as sugars, hard candy, fruit juices, cereals, simple puddings and breadstuffs, and the protein in the form of egg white, gelatin, soy bean products, skim milk or cottage cheese. Meats are best avoided, at least in the acute stages, since they may increase the digestive distress. It is also wise to prohibit use of meat extractives.

When gastric disturbance is marked, feeding of these patients presents a difficult problem. Under this circumstance some reliance can be placed on use of glucose solutions intravenously. Glucose can be given as 5-10 per cent solutions, and if these are given slowly so that the sugar will not be excreted rapidly by the kidneys, some of the caloric and carbohydrate requirement of the patient can be met. It must be realized, however, that even if 3,000 cc. of 10 per cent glucose is given daily and at such a rate that it is all utilized, only 300 Gm. of carbohydrates, or 1200 calories, can be given this way. This is hardly enough to meet fully the patient's caloric needs and the resultant starvation may induce fatty and other degenerative changes in the liver.

Intravenous administration of proteins for nutritional purposes has not been entirely solved to date. Experimental work suggests that various amino-acid mixtures may soon be available for the purpose. Blood plasma can be given by vein, of course, and will help maintain serum protein concentration. Some of this protein may even be utilized by the liver. The nutritional value of protein given in this way cannot, however, be considered to be very great. Since, therefore, the parenteral administration of foodstuffs is still in this somewhat unsatisfactory state, every effort should be made to have the patient take some food, particularly protein, by mouth, intravenous feedings being considered to be supplementary rather than complete substitutes.

Since it is our aim to increase the glycogen deposit in the liver, many authors recommend that patients with acute hepatic injury be given insulin in doses of 5-10 units three or four times daily. Without entering into a discussion as to the scientific basis of this form of therapy, it can at least be said that its value is not entirely established. The insulin is harmless, however, if given in conjunction with ample carbohydrates, and can be used if desired.

At present there is some evidence that, aside from their general nutritional value, vitamins are beneficial in cases of acute and chronic liver injury and they help promote hepatic regeneration. Use of vitamins A, B, C and D in large doses has, therefore, been strongly recommended. Of these, vitamin B fractions seem to be most valuable.[13] It would seem advisable to prescribe large amounts of all of these substances, although the absorption of the fat-soluble vitamins is uncertain if bile flow is completely stopped.

The present drug therapy of hepatocellular jaundice is very meagre. In cases of arsenical hepatitis sodium thiosulphate may be of value and may be given intravenously in doses up to 1.0 Gm. daily. Based on the studies of various European investigators, bile salt derivatives have been widely recommended in cases of acute liver disease. Such drugs as decholin are frequently described as beneficial since they are said to stimulate bile flow. I question the value of this therapy and feel that bile salts should be used with great caution in these acute cases. The suppression of bile that occurs under these circumstances is a result of hepatic damage and not a cause, and stimulating the liver to excrete more bile, if that is possible under these conditions, may not be an entirely harmless measure. If these drugs are to be used, they should be reserved for those instances in which bile flow has been reestablished but a low grade chronic icterus persists. Then the likelihood of causing further liver damage is least. All in all, the drug therapy of hepatocellular jaundice is not satisfactory and reliance must be placed chiefly on the general measures outlined.

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[13] Patek, A. J. Jr.: Treatment of Alcoholic Cirrhosis of Liver with High Vitamin Therapy, Proc. Soc. Exper. Biol. & Med., 37:329-330, Nov., 1937.

When the liver injury is so severe as to result in actual hepatic atrophy, the clinical picture is extremely grave. Delirium and coma, urine suppression and hemorrhages occur. Under these circumstances the prognosis is bad but strenuous treatment occasionally results in recovery. Intravenous glucose solution should be given freely. The mineral balance can be maintained by giving the glucose in Ringer's solution. If acidosis is pronounced, sodium lactate should be administered in the glucose solution. Multiple small transfusions are of great value in maintaining the blood volume, counteracting the toxemia and combating the hemorrhagic tendency, and blood should be given freely. In these severe cases oxygen should be used, since a state of anoxemia may contribute to the hepatic failure.

Patients with acute hepatocellular jaundice may have associated symptoms that cause great distress. Gastrointestinal disturbances may be marked, particularly at the onset. These are best treated by a sharp reduction in diet to the simple foods mentioned above. Mild sedatives may be administered. Pruritus may be another distressing symptom and may be difficult to relieve. External applications such as baths and lotions may be used but usually give only temporary relief. Of the drugs, sedatives are of most benefit. In occasional cases, such substances as atropine, calomel or calcium are helpful. The cautious use of ergotamine tartrate is justified in stubborn cases. Sodium thiosulphate may also give relief.

As has been stated, hemorrhages may complicate severe cases of icterus of this type. These result from dietary lack of vitamin K, failure to absorb it from the bowel and inability of the liver to convert it to prothrombin. The first two of these factors can be counteracted by vitamin K therapy and for this purpose one of the newer preparations that can be given intravenously is best. Then one need not worry about its absorption and bile salts, which may be harmful, need not be used. Dosage and methods of administration of this vitamin will be discussed in speaking of management of obstructive jaundice. In extremely severe cases it is probable that liver dysfunction will interfere with vitamin K utilization and the prothrombin deficiency and hemorrhagic state will continue. If the prothrombin time does not tend to revert to normal rapidly when vitamin K is given, frequent transfusions should be administered. For this purpose it is probably best to use direct transfusions of fresh blood and not to rely on bank blood.[14]

May I again stress the significance of the great regenerative power of the liver. Keeping the patient alive for a very few days may be sufficient to permit enough liver repair to allow the organ to resume a goodly portion of its function. For that reason even the most acutely ill and seemingly hopeless patient should be treated most energetically with intravenous fluids and sugar, oxygen and transfusions in the hope that hepatic regenerations will take place and lead to ultimate recovery.

When the acute phases of the illness are past, the patient may gradually increase his activity and the diet may be enlarged to include simpler meats and vegetables. Certainly during the persistence of any jaundice the high carbohydrate and low fat diet should be continued. An important point to emphasize in discussing the management of all types of hepatocellular icterus is that slight liver damage may persist for a long period, even years after apparent clinical cure has taken place. This means that patients who have suffered with such conditions as catarrhal jaundice or arsenical hepatitis should be spared as much as possible the future use of drugs that may subject their livers to further damage.

It is not within the scope of this discussion to comment upon the technical surgical problems to be met in treatment of obstructive jaundice. I wish, rather, to discuss those problems in the management of biliary obstruction which are the joint responsibility of the surgeon and internist, namely, the choice of time of operation, the choice of anesthetic and the preoperative preparation of the patient.

Choosing the time at which to operate upon the patient with jaundice calls for keen clinical judgment and much experience. The ideal time to operate is, of course, after the disappearance of the jaundice. This seemingly paradoxical statement is simply another way of saying that operation in the presence of icterus carries a definitely increased risk. For that reason one should wait, if possible, until jaundice has subsided before subjecting the patient to surgery. Ability to do this is naturally dependent upon the cause of the biliary obstruction.

Clinical experience seems to indicate that the liver suffers most and the operative risk is, therefore, greatest during a period of increasing biliary obstruction and increasing jaundice. Apparently the rising intrabiliary pressure subjects the hepatic cells to added injury. The worst time to operate on the icteric patient is during a period of rising jaundice. When the obstruction is the result of stone, complete duct block is usually of short duration, a matter of a few days. In these cases, it is good to wait until the peak of the jaundice is gone entirely and sufficient time, which may be a matter of two or three weeks, has elapsed for liver recovery to take place. In patients who are having rapidly recurrent biliary attacks such a long waiting period may be injudicious. In such cases it is best to plan to operate soon after the jaundice begins to decrease.

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[14] Quick, A. J.: Prothromin in Preserved Blood, J.A.M.A., 114:1342-1343, April 6, 1940.

When the common duct is completely and permanently blocked, as from malignancy, there is, of course, no tendency for the serum bilirubin to decrease. What usually happens in these instances is a rise in the intensity of the icterus for a period of about two to three weeks and then stabilization of the serum bilirubin at a fairly fixed level. This seemingly represents the point at which bilirubin manufacture is balanced by urinary excretion of the pigment. Experience indicates that an operation is much better withstood, if performed during this period of fairly constant icterus rather than during the period of increasing jaundice.

One may summarize these statements by saying that the best policy to follow in obstructive jaundice is to determine the serum bilirubin level frequently. In stone cases operation should be postponed until a drop has occurred and, if possible, until the serum bilirubin has returned to normal and remained there for some time. In patients with permanent biliary obstruction operation should be postponed until the serum bilirubin has reached a fixed level, this usually requiring two to three weeks. In all cases it must be kept in mind that the liver suffers as a result of biliary obstruction. It is, therefore, unwise to postpone operation beyond a period of about three weeks, if the presence of common duct obstruction is established.

The safest anesthesia for biliary operations is probably spinal. Aside from its value to the surgeon in affording satisfactory abdominal relaxation, this anesthesia is best because its use is not associated with anoxemia, to which the damaged liver is extremely sensitive. There is also the advantage of avoiding the use of fat soluble or other toxic agents such as avertin, chloroform or, occasionally, ether, which have been shown to be injurious to hepatic cells.

Satisfactory preoperative preparation of the jaundiced patient is of the greatest importance in reducing operative risk. Emphasis should be placed on two phases of this preparation, the nutritional and the use of substances to reduce the hemorrhagic tendency. The general principles of nutritional management have been discussed in speaking of treatment of hepatocellular icterus. The diet during the preoperative period should be high in carbohydrates, say 300-500 Gm., ample in protein, preferably supplying about 100 Gm. of vegetable or dairy protein, and very low in fat. As much of this as possible should be given by mouth. Intravenous glucose solutions may be used to supplement the fluid, carbohydrate and caloric needs. If serum proteins are low, plasma transfusions should be given or whole blood may be used if the patient is anemic. The nutritional state should be further improved by liberal use of vitamins, particularly the water soluble C and B fractions.

Specific interest centers in the use of vitamin K during preparation of these patients. There is no need to review the large amount of work which has been done on this subject. Suffice it to say that hemorrhage, which in the past has been considered to account for one-half of the deaths which occurred after biliary operations, is now known to be due in these cases to lack of prothrombin in the blood. This, in turn, is dependent upon vitamin K deficiency. This fat soluble vitamin is found in such foods as liver, cabbage, spinach, tomatoes, but a great deal of that which is utilized by humans is probably formed as a by-product of bacterial activity in the bowel.

Since vitamin K is fat-soluble, its absorption through the intestinal mucous membrane requires the presence of bile salts in the bowel. Once the vitamin is absorbed it is carried to the liver and converted to, or utilized in the manufacture of, prothrombin, a substance necessary for normal blood clotting. As prerequisites for a normal prothrombin level in the blood we may list an ample vitamin K source in the diet, the presence of bile salts in the bowel, an intestinal mucosa capable of absorbing the vitamin and a liver healthy enough to convert the vitamin to prothrombin. In case of complete biliary obstruction there is, of course, a lack of bile salts in the bowel so that no vitamin K is absorbed. There may also be the complicating factor of liver dysfunction. In primary liver cell disease hepatic dysfunction may alone be severe enough to interfere with prothrombin manufacture.[15] As a result of one or both of these factors prothrombin deficiency occurs and hemorrhage may follow.

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[15] Bollman, J. L., Butt, H. R. and Snell, A. M.: Influence of Liver on Utilization of Vitamin K, J.A.M.A., 115: 1087-1091, Sept., 28, 1940.

There are now available a number of methods for measuring blood prothrombin as a means of determining vitamin K deficiency. Some of these are quite simple and can be performed by any physician at the patient's bedside. Since they are so readily performed, these tests should be used routinely during preoperative studies of all patients with obstructive jaundice so that any need for vitamin K may be detected and prophylactic measures instituted. Liver function tests such as the hippuric acid test should not be considered substitutes for determination of the prothrombin time, since it has been shown that prothrombin deficiency and bleeding may occur even when the liver function is apparently normal by these tests[16].

For patients who must be operated upon while jaundiced and particularly those with demonstrable prothrombin deficiency vitamin K therapy must be instituted. There has fortunately been such rapid advance in our knowledge of vitamin K chemistry that many of the problems of vitamin administration have been solved rapidly. It is no longer necessary to depend upon crude fish meal and alfalfa extracts as sources of K. It is now known that many naphthoquinone derivatives possess vitamin K-like activity and, since these have been prepared in both water and oil soluble forms, their use is quite simple.

At present substances possessing vitamin K activity are available for oral, intramuscular or intravenous use. For oral use it is perhaps best to use 2-Methyl-1, 4-naphthoquinone which is on the market under many trade names. Since bile salts are needed to insure the absorption of this substance from the gastrointestinal tract, they should be administered in conjunction with the naphthoquinone. A dosage schedule of 1-2 mg. of 2-methyl-1, 4-naphthoquinone and 0.6-1.0 Gm. of bile salts one to three times daily will insure ample vitamin administration. In the absence of liver damage a return of the prothrombin level to near normal will occur in from twelve to thirty-six hours and this can be maintained by the continued use of smaller amounts until operation.

This preparation can be dissolved in corn oil and given intramuscularly in 2 mg. doses or, being somewhat soluble in water, can also be given intravenously in the same dosage. We have found the preparation 4-amino-2-methyl-1-naphthol, which is now marketed as synkamin, to be extremely satisfactory for intravenous use. This can be given in doses of 1-3 mg. daily. When either the intravenous or intramuscular method is used, there is no need for the simultaneous use of bile salts. The intravenous route seems most satisfactory both for preoperative and postoperative use. The prothrombin level rises within a few hours, there are no toxic effects and administration is simple. Absence of adequate response can be ascribed to only one factor, severe liver damage. If there is not satisfactory rise in the prothrombin following the use of these K substitutes, one must resort to blood transfusions to overcome the bleeding tendency, though this is not entirely satisfactory.

Vitamin K administration by some route must be continued for eight to ten days postoperatively. The anesthesia, operative bleeding and handling of the liver may all cause a prothrombin drop during the postoperative period and hemorrhage may occur if this is not guarded against.

Vitamin K therapy has largely removed the risk of hemorrhage as a cause of death following operations upon icteric patients. Up to a few years ago about 20 per cent of operations for relief of jaundice were followed by some hemorrhagic manifestations and the bleeding tendency in obstructive jaundice accounted for about 50 per cent of the gross surgical mortality. It has been estimated that the use of vitamin K has reduced the incidence of hemorrhage over 80 per cent and it is believed that, if transfusions are used when the vitamin fails, almost all deaths from bleeding in jaundice may be prevented.[17]

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[16] Lucia, S. P. and Aggeler, P. M.: Influence of Liver Damage on Plasma Prothrombin Concentration and Response to Vitamin K, Am. J. M. Sci., 201:326-340, March, 1941.

[17] Rhoads, J. E.: The Use of Vitamin K, Penn. M. J., 44:1256-1258, July, 1941.

ADMINISTRATIVE NEGLIGENCE*

The courts are beginning to impose greater importance on "administrative negligence." The courts as a general rule do not hold charitable "nonprofit" hospitals responsible for the negligence of its doctors, nurses or interns in the treatment and care of the patient, so long as the hospital has shown due care in the selection of these people and carefully supervises the services which they render the patient. The hospital may be and frequently is held responsible for "administrative negligence" and damages have been recovered for injuries resulting from such negligence.

The hospital may be held responsible for permitting dangerous conditions to exist if the patient or visitor is injured because of these conditions. If it does not use reasonable care in the upkeep and maintenance of its premises any physical plant, and because of such neglect an injury results, the victim of the injury may recover.

All of which comes within the definition of administrative negligence. Hospital administrators must exercise care and diligence in maintaining elevators, stairs, floors and other hospital equipment in good repair, and in safe working condition. Hazards that may cause accidents should be promptly eliminated and there should be no such condition as "administrative negligence" known in our hospitals.

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*Editorial, Hospitals, 15:66, December, 1941.

EPIDEMIOLOGY OF POLIOMYELITIS*

NEWER DEVELOPMENTS

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Today poliomyelitis is perhaps the most feared of our communicable diseases by both parents and physician, even though it is a relatively minor cause of illness and death. For at least a century, research workers and clinicians have sought its cause, and although a virus was demonstrated as its cause in 1908, its manner of invasion of the human host and mode of dissemination of the virus during an epidemic is not yet fully understood.

Many unsolved and controversial problems must be definitely settled before either the completed epidemiologic picture can be made, or effective control measures can be instituted. From the standpoint of epidemiology, the question of pathogenesis must be definitely settled. The virus has been repeatedly recovered from the stools of cases and contacts, and from sewage in epidemic areas. In several instances it has been demonstrated in nasopharyngeal washings from human cases.

The question of whether the alimentary tract is the primary site of infection and multiplications of the virus and thus mainly an intestinal disease, or whether the primary site of infection and growth of the virus is predominantly in neuronal tissue, must be settled. In a study of the distribution of the virus in the human body, made by Sabin,[1] it was found that it was distributed predominantly in only two systems, the nervous system and the alimentary tract. The virus was found in pharyngeal tissue and in the washed wall of the ileum.

Sabin states: "The pattern of virus distribution in human poliomyelitis * * * points to almost the entire alimentary tract as the primary site of attack * * *" He further states, "* * * involvement of the walls of the alimentary tract can, in the light of our present knowledge, be interpreted only that that is where the virus enters the body and multiplies outside the central nervous system."

Goodpasture,[2] however, cautions that, "there is no evidence at hand that the virus of poliomyelitis can infect extraneural tissues and for the present, at least, it would seem wise not to neglect the possibility of a neural portal while all other possibilities are being explored."

The results of Sabin and Ward's study may confirm the clinical evidence which rather emphatically suggests that poliomyelitis is a mild alimentary tract infectious disease which occurs periodically in epidemic form and is widespread throughout the susceptible population in areas where paralyzed cases are occurring. Some investigators believe that the paralysis which occurs is a complication of a mild "flu-like" illness.

Trask and coworkers[3] state that these ill defined and brief types of illness are by far the commonest form of poliomyelitis. They outnumber the paralytic cases six or eight times, and as such they are perhaps of more significance from an epidemiologic standpoint than are the paralytic cases. Trask also states that one child under his care, who was sick four days with an ill defined disease, excreted the virus for twenty-four days from the onset of his mild illness. The virus remained viable for ten weeks in one of his stools which was kept in the refrigerator.

Kramer[4] studied an outbreak in an orphanage where the virus was recovered from the stools of three out of twelve apparently healthy children in contact with cases and in a healthy adult nurse intimately associated with cases, which he states probably supports the theory that the infection is transferred by direct personal contact and corroborates evidence that the virus of poliomyelitis is spread throughout the population mainly by undiagnosed mild cases or healthy carriers.

In the Tacoma group of cases, which are reported below, two diagnosed cases of poliomyelitis occurred in a family of six children. One (onset June 24, 1940) of the cases died, and the other (onset June 26, 1940) recovered from bulbar symptoms. A third child was admitted to the isolation ward with a suspected abortive case. This child had a moderate temperature on June 28, which lasted five days, with coughing, vomiting and sore throat. He was discharged to his home on the sixth day well and with a final diagnosis of upper respiratory infection. The virus was not recovered from the first two cases, but was recovered from the case with diagnosis of upper respiratory infection. The remaining three children had symptoms of illness so mild that the mother did not report them to the physician, but when virus studies were made on them, poliomyelitis virus was recovered from the stools of one.

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*Read before the Fifty-second Annual Meeting of Washington State Medical Association, Seattle, Wash., Aug. 24-27, 1941.

[1] Sabin, A. B.: Etiology of Poliomyelitis. J.A.M.A. 117:267-269, July 26, 1941.

[2] Goodpasture, E. W.: Pathology of Poliomyelitis. J.A.M.A. 117:273-275, July 26, 1941.

[3] Trask, J. D. et al.: Poliomyelitis Virus in Human Stools. J.A.M.A. 111:6-11, July 2, 1938.

[4] Kramer, S. D. et al.: Recovery of Virus of Poliomyelitis from Stools of Healthy Contacts in Institutional Outbreak. Pub. Health Rep. 54:1914-1922, Oct. 27, 1939.

In another family of six children, two diagnosed cases occurred, one of whom died, the other was a nonparalytic case. The remaining four children all had minor upsets and in one the virus was recovered. Mild illness in other families, where a diagnosed case occurred, was a common finding.

As mentioned above, a rather severe epidemic of poliomyelitis, in which 202 cases were reported, occurred in Pierce County and Tacoma during the summer of 1940. The first case reported occurred on May 3 and the last on December 8, the peak week being the second week of June. The National Foundation for Infantile Paralysis conducted an intensive epidemiologic and laboratory study of the cases in the Tacoma area during the peak of the epidemic. The entire results of the study are being prepared by Dr. Don Gudakunst and will be published later. Dr. Gudakunst organized the study in Tacoma for the Foundation which was later under the direction of the Tacoma Health Department.

The Tacoma study is significant from the standpoint of being one of the earliest attempts to correlate the epidemiology, laboratory and clinical symptoms from an intensive investigation in the field during an acute epidemic. The study seems to corroborate the work of Trask, Paul, Kramer and others in the fact that the virus is widespread in epidemic areas and further supports the belief that central nervous system involvement is not the most common morbid manifestation of the disease.

Time permits only a brief mention of the laboratory work of the Foundation's study. Seventy-six typical or abortive cases of poliomyelitis occurring during the height of the epidemic in Pierce County and Tacoma were studied and in addition nearly 1000 contacts of these 76 cases were observed, which does not represent all of the contacts.

Laboratory specimens were obtained from (1) typical cases, (2) abortive cases, (3) well contacts of cases, (4) sick contacts of cases and from a (5) control group of individuals who had no known contact with a case. Most of these specimens were mailed via air mail to the Hooper Foundation Laboratory in San Francisco. The laboratory is under the direction of Dr. Karl Meyer. Miss Beatrice Howitt[5] carried on the virus studies. Obviously, specimens could not be collected for every case or contact but a fair sampling was obtained in each of the five groups. The types of laboratory specimens obtained from the Pierce County and Tacoma group were as follows:

Type of Specimen	*Number*†
Blood serum	55
Spinal fluid	55
Nasal washings	51
Feces	102

Table 1

Neutralizing antibody tests were run on all serums and spinal fluids for the St. Louis virus of encephalitis and the western equine encephalitis for the purpose of eliminating the possibility of other neurotropic viruses being present which might be confusing factors.

Nasal washings were examined for the presence of poliomyelitis virus. Of the fifty-one nasal washings, not one produced poliomyelitis or any other disease after inoculation into monkeys. Only one of these specimens, however, came from an acute case of poliomyelitis. All of the others were from noncontacts or contacts to typical cases of the disease.

All fecal specimens were examined for the presence of poliomyelitis virus by monkey inoculations. The results of the stool examinations for the various types of cases studied were as follows:

Diagnosis	*No. studied*	*No. positive*	*% positive*
Typical case	28	11	39.2
Abortive case	17	4	23.5
Sick contact (not diagnosed as poliomyelitis)	22	3	13.6
Well contact	27	1	3.5
Control (no known contact)	8	1‡	12.5
Total	102	20	19.7

Table 2

Poliomyelitis virus was demonstrated to be present by monkey inoculations in 11 (39.2 per cent) of 28 stools from typical cases of poliomyelitis; 4 (23.5 per cent) of 17 abortive cases; 3 (13.6 per cent) of 22 undiagnosed sick contacts; and one (3.5 per cent) of 27 well contacts and one (12.6 per cent) of 8 controls with no known exposure to any illness for over two weeks prior to obtaining the specimens.

Thus, the Tacoma study seems to add material support to those who believe that central nervous system involvement is not the common form of the disease. The study, also, adds further support to Trask and Paul's[6] statement that the virus is widely distributed and relatively stable. They seem to attach considerable significance to the intestinal features of the disease. Even though the virus has not been definitely demonstrated in the mesenteric lymph nodes, the mesenteric lymphadenopathy found at postmortem in a large percentage of the cases has some significance. In addition, generalized lymphadenopathy was a common finding in the Tacoma cases. It is obvious that a postmortem would not be possible, if the central nervous system were not involved. One wonders what the pathology might be in the so-called abortive case during the two or three day febrile period before the patient is well and normal again. Spinal fluids in these cases show no deviation from normal.

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[5] All laboratory results from unpublished reports by permission of Miss Beatrice Howitt, Hooper Foundation Laboratory, San Francisco, Calif.

†None of the specimens from King County, Wash., are reported in this report.

‡This case was reported as doubtfully positive.

[6] Trask, J. D. and Paul, J. R.: Observations on Fecal Examination of Poliomyelitis. Am. J. Pub. Health, 31: 239-244, March, 1941.

If the virus is widespread and many mild undiagnosed cases occur during an epidemic, do these mild infections produce immunity? The periodicity of poliomyelitis epidemics, the fact that children are more often attacked than adults and the fact that 65.3 per cent[7] of all adults have present in their blood sera neutralizing antibodies to the poliomyelitis virus seem to indicate that immunity must develop in an adult either by maturation immunity, subclinical doses of the virus or by these mild missed or abortive cases.

Several workers[8] have come to the conclusion that neutralizing bodies in sera have no relation to resistance to poliomyelitis. Schultz[9] states that the neutralizing antibodies are adventitious byproducts of infection. The fact still remains and is well substantiated that, when neutralizing antibodies are mixed with standard doses of the virus and injected into monkeys, poliomyelitis does not result. Further research must be done to settle the question of the significance of specific neutralizing antibodies in humans.

If one assumes for a working hypothesis that poliomyelitis is a mild "flu-like" infection with the seat of the pathogenesis in the intestinal tract, and further assumes that the central nervous system involvement is accidental to or a complication of this mild infection, the epidemiologic picture is much clearer. If measles occurred in epidemic form without a rash to identify the disease, we would probably find a spotted epidemic of middle ear infections with no epidemiologic relationship.

If poliomyelitis exhibited a rash consistently as measles does, the complications of middle ear infections in measles would possibly simulate the complication of central nervous system involvement in poliomyelitis. If this working hypothesis is considered, it becomes quite evident that the control of epidemics of poliomyelitis will be very difficult and practically impossible without a safe protective virus vaccine.

The work of Armstrong,[10] Jungeblut and Sander,[11] in adapting the virus of poliomyelitis to a cotton rat, the white mouse and guinea pig, is encouraging in that a practical laboratory procedure is now available for study of certain strains of the virus. Perhaps now with a cheap laboratory animal for investigation, the baffling biologic properties of the poliomyelitis virus may be better understood.

The reason why the virus gains entrance into the central nervous system in some individuals and may not in others, and poliomyelitis occurs more frequently in the warmer months of the year in temperate zones is at present unknown.

Aycock[12] suggests that there is some endocrine dysfunction which allows the virus to find entrance into the central nervous system. He feels that perhaps this endocrine influence is altered during cold weather. Thus the infection may occur in cold weather, but the nervous system is not involved. He also points out that paralysis occurs in pregnant women many more times than the laws of chance would allow. He has been able to make castrated immature female monkeys resistant to the infection by injecting estrogenic substance. In the Tacoma epidemic, three pregnant or recently pregnant women were severely attacked. Probably an incidence of not more than one in 500 cases would be anticipated.

In concluding this paper, may the liberty be taken to further stress that it is not the intention that any definite conclusion can or should be drawn from the above discussion. It is presented only for the purpose of further conjecture.

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[7] Howitt B. F.: Poliomyelitis; In Vitro Neutralization Tests, Using Normal Adult and Convalescent Human Serums, California and West. Med. 43:407-411, Dec., 1935.

[8] Burnet, F. M. and Jackson, A. V.: Poliomyelitis; Significance of Neutralizing Antibodies in Human Sera, Australian J. Exper. Biol. M., 17:261-270, Sept., 1939. Hudson, N. P., Lennette, E. H. and Gordon, F. B.: Factors of Resistance in Experimental Poliomyelitis with Comments on Immunity in Polio Myelitis. J.A.M.A. 106: 2037-2042. June 13, 1936.

[9] Schultz, E. W.: Immunity and Prophylaxis in Poliomyelitis. J.A.M.A. 107:2102-3104, Dec. 26, 1936.

[10] Armstrong, C.: Cotton Rats and White Mice in Poliomyelitis Research. Am. J. Pub. Health. 31:228-232, March, 1941.

[11] Jungeblut, C. W., and Sander, M.: Transmission of Murine Strain of Poliomyelitis Virus to Guinea Pigs and Rhesus Monkeys. J.A.M.A. 116:2136-2139, May 10, 1941.

[12] Aycock, W. L.: Subclinical Endocrinopathy as Factor in Autarceologic Susceptibility to Poliomyelitis. Endocrinology. 27:49-57, July, 1940.

PATHOLOGY OF POLIOMYELITIS*

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It is now recognized by most authorities that poliomyelitis is a systemic disease characterized by two distinct pathologic phases. One of these occurs early in the course of the disease and affects the reticuloendothelial cells in all of the lymphoid tissue of the body. In addition there may be degenerative changes in the myocardium, liver and kidneys. Vascular endothelium may be damaged, producing hemorrhages into the intestinal canal and nervous system. The second major phase of the disease is regarded by some as only a complication of the systemic disease, in which localized involvement of the central nervous system occurs.

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*Read before the Fifty-second Annual Meeting of Washington State Medical Association, Seattle, Wash., Aug. 24-27, 1941.

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The histopathology of poliomyelitis has been determined only by necropsy studies. Cord and bulbar lesions afford the chief sources for clinical expressions of the disease but damaging effects of the infection are more widespread throughout the central nervous system. Focal lesions may be found in the cord, medulla, pons, brain stem, meninges and even the brain cortex. Hence, a more descriptive term for the disease would be meningoencephalomyelitis. Lesions have also been found in the dorsal root ganglia and careful search might even disclose lesions in peripheral ganglia. In the spinal cord the lesions are most prominent and extensive in the grey matter of the anterior horns which produce the dramatic clinical expression of the disease, notably flaccid paralysis of the extremities.

Experimental investigations of the disease in monkeys seem to indicate that the primary lesion is in the nerve cells and that this is produced by the presence of the virus within the neurons which spreads along axis cylinders from one focus to another. The exact sites of entrance into the body in human cases of poliomyelitis are not definitely known. Several theories as to how the virus reaches the central nervous system have been championed by students of the disease. These theories are as follows: (1) Poliomyelitis is a systemic disease and the virus reaches the central nervous system through the blood stream, hence the cerebral involvement may be regarded as a complication of the systemic disease. (2) The virus reaches the central nervous system through the perineural lymphatics of the nasal mucosa. (3) The virus enters the central nervous system through the olfactory mucosa, penetrating the olfactory bulbs and spreading through the nervous substance by way of axis cylinders. Absence of significant lesions in the olfactory bulbs and lobes of the brain in human disease and failure to demonstrate the virus in these structures have cast considerable doubt on the nasal route of infection.

The first theory of systemic disease is supported by demonstration of the poliomyelitic virus in feces and in sewage from infected foci, often in extremely high concentration. Convincing evidence that the virus enters the body by means of the gastrointestinal tract is still lacking. The virus has been demonstrated in the wall of the small intestine, but not in the lymphatic tissue.

During the Pierce County poliomyelitis epidemic of 1940, clinical and postmortem data were available from twelve cases of poliomyelitis. Classic symptoms and spinal fluid characteristics were present in each case. Pathologic findings exclusive of the nervous system included hyperplasia of the lymphatic tissues of the body, which was present in all cases. Pulmonary lesions included three cases of bronchopneumonia, three of hemorrhagic edema and three of pulmonary atelectasis. In two cases an exudative myocarditis was present, and this occurred in the absence of bronchopneumonia.

Central nervous system lesions were visible grossly in the spinal cord by the protruding swollen appearance of the anterior horns on cross section. These swollen anterior horns often showed a pink color and red flecks, indicating congestion and petechial hemorrhages. Microscopically there were petechial hemorrhages throughout the brain and spinal cord, chiefly in the grey matter, inflammation with exudation of leukocytes and lymphocytes, destruction of nerve cells and grey matter in the spinal cord and brain stem, with varying degrees of demyelination of the cord and nerve roots. The lesions in the cerebellum, basal nuclei and cerebrum were less marked than those in the pons, medulla and spinal cord.

In our series of twelve cases, inflammation was recognized in the olfactory system in only one case and even here the lesions were of a minor character. The olfactory radiations were not involved any more severely than any other structures in the basal portion of the brain. Hence, our study does not support the theory of the olfactory bulb portal of entry for poliomyelitis.

In one case areas of demyelination of the white matter of the spinal cord was found. Demyelination was also seen in the anterior roots in cases of relatively long duration. Postmortem examination carried out in cases of poliomyelitis a sufficiently long interval after the onset of the infection would probably show frequent areas of demyelination in the white matter of the spinal cord.

Of particular interest in our series of cases was occurrence of an acute purulent myocarditis in two instances. To my knowledge this finding has not been previously recorded in cases of poliomyelitis and, since no bronchopneumonia or other infection was found to account for the myocarditis, we may at least theorize that the myocardial involvement was produced by the virus of this disease. This would add additional support to the theory of its systemic nature.

In one case, in which death occurred four and one-half months following the initial infection, there was definite clinical and pathologic evidence that a reinfection had occurred. This patient at the time of the initial infection had bulbar involvement requiring the use of a respirator. She was later removed from the respirator and was about to be discharged from the hospital when a second typical clinical attack of acute poliomyelitis occurred. At the time of the second infection she was still being kept in the poliomyelitis ward of Pierce County Hospital. A review of the literature reveals several cases of recurrent poliomyelitis in which the interval between the first and second infection varied from eight days to ten years.

This case of reinfection might illustrate the need for segregation of recovering or recovered cases of poliomyelitis from those having an active infection of the same type. Apparently no immunity is built up by the virus of poliomyelitis itself, which would explain the discouraging results in attempts to produce active or passive immunization by means of serum administration.

NEUROLOGIC ASPECTS OF POLIOMYELITIS*

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Poliomyelitis is supposed to be a definite disease with a specific etiology. It must be remembered that the disease entity was formed before the etiology was known. In some respects it would probably be safer to speak of the poliomyelitis syndrome.

After discussion of the etiology, epidemiology and pathology of poliomyelitis, which should be supported by a paper on its orthopedic care, there is little for consideration under the heading of its neurologic aspects. Instead of talking to you of the cut and dried possibilities which result from anterior horn cell disease, it would seem much more worthwhile to present less discussed aspects of the problem, for I am sure that none of you care for any further explanation of the fact that paralysis in poliomyelitis may have an acute spastic with a terminal flaccid phase.

Since poliomyelitis is really a description of a syndrome, with a recently more or less generally accepted etiology, and requires special animal inoculation for verification, diagnosis in the average clinician's hands must remain a clinical diagnosis. Personally I know no better way to suppose that a patient has poliomyelitis than to have one who has a prodromal illness with fever and signs of meningitis or meningismus, accompanied by a slight increase in globulin and a slight increase in cell count of the spinal fluid, who has or develops a peripheral flaccid or bulbar paralysis in the presence of an epidemic of supposed poliomyelitis.

I believe an isolated case must always remain in doubt unless animal inoculation is done and the suspected virus recovered or the anterior horn cells are later examined. This may seem extreme to you, but published statistics of the Herman Kiefer Hospital of Detroit[1] for the years 1927 to 1935 show that of 790 admission diagnoses of poliomyelitis, only 445 or 56.3 per cent were confirmed, even by clinical observation.

Various classifications of clinical types have been offered, and one can make his classification as complicated as desired. It is probably best not to include a meningeal form, since the symptoms of meningeal irritation may possibly come from stretching the posterior roots of the spinal nerves, or as has been suggested by others, purely from spasm of the spinous muscles. Usually the pathologic descriptions do not cite marked changes in the meninges over the brain. There seems to be less dispute as to whether or not there is an encephalitic form, and I would like to see it included.

One may well accept the classification of Fischer and Sillerman.[2] Under that we have: (1) a nonparalytic form with fever, vomiting, pain in the back of the neck or in the spine, and suggestive symptoms of meningeal irritation with at least twenty cells in the spinal fluid; it must be admitted that there are typical cases of poliomyelitis without an increase in cell count; (2) a spinal paralytic type with weakness or paralysis of the muscles supplied by segments of the spinal cord; (3) a bulbar type with involvement of structures in the medulla oblongata and pons, as manifested by facial weakness, nasal voice, dysphagia, dysarthria or respiratory distress of central region; (4) an encephalitic variety, in which the patients are drowsy, delirious, comatose, or have convulsions or diplopia.

One's opinion of the above classification must rest somewhat upon one's theory of the mode of entrance of the infection into the human body. If one believes that the infection must of necessity have access to the central nervous system through the olfactory nerve and that it spreads along the axones of the brain to the spinal cord, it is not unreasonable to suppose that there is no meningeal involvement per se or infection of the spinal fluid, but existence of an encephalitic form would seem entirely reasonable. However, if one believes that the common route is through the gastrointestinal tract via the sympathetic fibers to the spinal cord with the bulbar form passing along the vagus, and it is possible that the virus may travel along the chorda tympania to the superior salivary nucleus, and from thence to the nucleus of the seventh nerve in the medulla, there is probably less reason to suspect an encephalitic form.

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*Read before the Fifty-second Annual Meeting of Washington State Medical Association, Seattle, Wash., Aug. 24-27, 1941.

[1] Top, F. H. and Brosius, W. L.: Differential Diagnosis of Poliomyelitis. J. Pediat., 10:27-36, Jan., 1937.

[2] Fischer, A. E. and Stillerman, M.: Acute Anterior Poliomyelitis in New York in 1935. Am. J. Dis. Child., 54:984-1004, Nov., 1937.

There are some who agree with Richter[3] that there may be extensive involvement of the cerebrum, even to the extent of a diffuse demyelination of the subcortical white matter to produce a condition which might well be interpreted as the encephalitis periaxialis diffusa of Schilder. The case described by Richter was definitely one of acute anterior poliomyelitis, but it was not proved that it belonged in the Heine-Medin group.

This is an illness, in which we deal not only with the patient but the family and the public. It is hard to derive any exact statistic that would not be excepted to by some. I find that these figures have at least gained publication. In the course of an epidemic of those who show sore throat, nausea and vomiting, malaise, fever, pharyngitis and a normal spinal fluid, some part of 5 per cent will present the preparalytic phase of invasion of the central nervous system with headache, stiff neck, stiff back, tremor, prostration, head drop, muscle tenderness, reflex changes and abnormal spinal fluid. Of these not more than 50 per cent will develop paralysis. Or less than 3 per cent of the individuals, who show systemic symptoms in the presence of an epidemic of poliomyelitis, are doomed to develop paralysis.

If one adds to this the data of the Swedish statistics of 40 per cent residual, one arrives at a figure of 1 per cent permanent paralysis among those with systemic symptoms in the presence of an epidemic. This is of false comfort in the presence of a 15 to 20 per cent mortality among those developing paralysis.

This brings up the problem of whether or not there are relapses, recurrences and chronic forms of poliomyelitis. There are relapses and recurrences of the disease but there is no chronic form. So-called chronic poliomyelitis is a form of progressive spinal muscular atrophy. The term chronic poliomyelitis is a misnomer, for the disease is a chronic progressive, noninflammatory, degenerative disease. Chronic poliomyelitis is a "primary degenerative process of the anterior horn cells," that is due to metabolic factors. It is possibly true that a previous attack of acute poliomyelitis may predispose to the development of progressive spinal muscular atrophy.

Acute poliomyelitis which follows a previous attack after an interval of two years is referred to as a recurrence or second attack. The literature to 1935 records fifteen such cases which are generally accepted. The free interval in these cases ranges from two to twenty years. Experimental poliomyelitis has been produced in the laboratory by intracerebral injection in rare monkeys that have residual paralysis from previous poliomyelitis of another strain.

The general consensus of opinion is that relapses are possible within a period of three months, Wilson[4] prefers the figure of four months. Fresh palsies within this time limit are relatively frequent. After four months the virus can no longer be recovered from the throat, and the carrier state is probably ended. Thus, autoinfection should no longer be possible.

Having excluded any form of chronic poliomyelitis, the presence of acute poliomyelitis among adults deserves greater consideration than is usually given the subject. There seems to be an impression among the lay public at least that adults are immune to the disease. But it has been reported as late as the sixty-first year. In the various epidemics which have occurred in the United States, from 5 to 9 per cent of the cases appeared in individuals over twenty years of age. During the California epidemic of 1934, 29 per cent of the cases in Los Angeles and 21 per cent of the cases in San Francisco were over twenty-one years of age.

From a neurologic point of view the Los Angeles epidemic of 1934 must be seriously reviewed, even though there have been rare suggestions that it should be classed as "X" disease. Some 15 per cent of the cases in this epidemic appeared in the personnel of the Los Angeles General Hospital. Five per cent of the physicians and 10 per cent of the nurses were afflicted. Of these less than 40 per cent had returned to full time work at the end of an eighteen month period.

Such figures as these should leave us free to question our present methods of treatment of the late phases of poliomyelitis. Prophylaxis, whether by ricinolated vaccine or formalized vaccine or some other similar method, is a problem best answered by the immunologist. The aftertreatment is, however, a fair problem for the consideration of the neurologist. The present method of immediate immobilization in a position of rest is supported by good logic. The orthopedists can best answer as to whether or not they consider this method ideal and as representing perfection. If we are to accept the opinion of Wilson[4] that there is not a polyneuritic variety, then the so-called Kenny treatment must be given fair consideration. It is readily admitted that Sister Kenny may be in error in her explanation of the mechanisms. Essentially her method is to begin treatment a day or two after the diagnosis is made. A firm mattress is supported by bed boards, a foot board is used to maintain the posture as in standing, and the arms are placed at the side and the knees straight. No splints or cast are used. Hot foments are applied every half to two hours to the sore and spastic muscles. Passive motion short of pain is used several times daily. Later there are two periods of muscle training daily.

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[3] Richter, R. B.: Acute Anterior Poliomyelitis (Heine-Medin Disease) with Unusual Cerebral Manifestations: Clinical and Pathological Report of Case. Arch. Neurol. & Psychiat., 42:1039-1052, Dec., 1939.

[4] Wilson, S. A. K.: Neurology, 1838 pp. The Williams & Wilkins Company, Baltimore, 1940.

The group at the University of Minnesota[5] have observed twenty cases under Sister Kenny's care and report that there has certainly resulted no harm from the "abandonment of immobilization." There can be no neurologic damage from such form of therapy. It certainly would seem to be a much preferable treatment to the one so-called neurologic method now in the literature which advocates exposure of the spinal cord to the "beneficial effects" of an electric current. Sister Kenny's method has been condemned and praised but deserves further trial.

The neurologist is certainly deserving of an opinion in the care of the so-called bulbar form. If there is a disturbance in respiratory rate, if the patient has lost control of his pharynx, and if he suffers from dysphagia and dysarthria, certainly he is not going to be benefitted by placing him in a Drinker respirator which must of necessity establish a second respiratory rate and force him to aspirate his own pharyngeal content. He will certainly do better with postural drainage, mechanical aspiration of the pharyngeal content, and parenteral fluids. This must not be misunderstood as any reflection on the most praiseworthy care of respiratory difficulties from spinal, segemental muscle paralysis by the Drinker respirator.

There are few reports of the late results of the use of the Drinker respirator. The four and a half year followup of Brahdy[6] is worthy of mention. Of fifty-one cases so treated, 47 per cent died while on treatment. Of the twenty-seven who were successfully removed from the respirator, 52 per cent were alive at the end of the four and a half year period. Three were bed patients and four got about in wheel chairs. Seven were up and about attending school. Two had no residual paralysis. Certainly the 14 per cent returned to normal existence justifies the therapy in spite of any criticism that may be offered.

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[5] Cole, W. H. and Knapp, M. E.: Kenny Treatment of Infantile Paralysis; Preliminary Report. J. A. M. A., 116:2577-2580, June. 1941.

[6] Brahdy, M. B.: Late Results in Sixty-three Cases of Poliomyelitis Treated in Respirator. New York State J. Med., 36:1147-1150, Aug. 15, 1936.

TREATMENT OF POLIOMYELITIS*

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I intend in no way to exhaust the subject of treatment of anterior poliomyelitis, commonly known as infantile paralysis. The general object of this paper is to bring before the listeners a general review and brief summary of the subject matter. For the benefit of analysis this study has been divided into preventive treatment or prophylaxis, and treatment of anterior poliomyelitis.

PREVENTIVE TREATMENT OF POLIOMYELITIS

This phase of treatment is not very well understood. It is well that we have a slight knowledge of the modes of infection as well as resistance and immunologic states.

Infective Organism. Many workers have studied infective possibilities in trying to determine the infective organism. There are apparently two schools of thought as to the identity of the infective agent: (1) that of a pleomorphic strain of the streptococcal organism; (2) that it is a virus that causes the infection of poliomyelitis.

Quoting Clark,[1] he states: "Among the more complete studies refuting the streptococcal hypothesis, should be mentioned that of Bull, Smillie, Long, Olitsky and Stewart and Fairbrother. These authors and all others now, I believe, save Rosenow, are agreed that the streptococci which have been isolated are agonal invaders or contaminants, and that they may be obtained just as frequently from animals suffering from conditions other than poliomyelitis."

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[1] Clark, P. F.: History of Poliomyelitis up to the Present Time. Infantile Paralysis. National Foundation for Infantile Paralysis, 1941.

Resistance and Immunity. Early in the history of experimental poliomyelitis, specific antibodies which would neutralize the virus in vitro were demonstrated in the blood of the recovered monkey, while the blood of normal animals apparently had no such effect. Serum from recovered human cases also contained these antibodies. So hopes were entertained that specific serum therapy might become available. These hopes have unfortunately gone glimmering.

Experimental Active Artificial Immunity. Active artificial immunity in monkeys has been attempted by all workers in the field. The following materials have been tried: active virus, virus modified by the following methods such as drying, treated by formaldehyde phenol, immune serum, aluminum hydroxide jells, and sodium ricinoleate. Different routes of vaccination, including intranasal and intracutaneous inoculations, have been employed, and both intracereberal and intranasal routes have been used for the subsequent test infection. Hopes have risen and hopes have fallen. At the present time they remain in a semiprostrate position.

Results of monkeys' vaccination, if interpreted by the production of increased serum antibodies, are frequently successful. If interpreted by capacity to resist subsequent inoculation, they are commonly unsuccessful. As in so many virus diseases, either the vaccine is viable and is likely to produce the disease or is nonviable and fails to immunize.

The protective effect may conceivably occur even after infection is already present in the body by limiting its extension to areas not yet infected. Relatively speaking, this would appear to be most effective in virus diseases in which, as in measles after a period of local infection, the virus invades the blood stream and becomes generalized. Under these circumstances serum given before invasion of the blood stream should protect to some extent.

More and more evidence has accumulated, however, that poliomyelitis is not a blood borne infection and the experiment of Bodian and Howe[2] shows it is not merely neurotropic in the usual sense of the word but it is actually neuronotropic, limited in its capacity to multiply to the neurons themselves. It can no longer be maintained that the infection in its so-called "preparalytic stage" is invading the meninges from without; it is already encountered in the neuron of the central nervous systems as or before the first symptoms show themselves. Microscopic examination shows this clearly and the fact that the changes in the spinal fluid are so often present at the onset is clinical proof. In theory the possibility of blocking the passage of virus from one neuron to the next by the early use of serum has been suggested but it is not supported by experiments of Schultz and Gebhardt.[3] In two very thorough studies they have shown that an extremely potent serum (in the sense of a high virucidal content) given daily in large amounts, beginning twenty-four hours after intranasal inoculations, was completely incapable of preventing the development or of modifying the course of the experimental disease.

These experiments have been criticized as not applicable to human poliomyelitis because of the greater severity of the disease in the rhesus monkeys, but certainly the objection is offset by the fact that the monkeys received a much more potent serum given in large amounts more often and much earlier than is ever done in the case of human beings. The presence of neutralizing antibodies in greater or lesser amounts in human beings does not prevent the occurrence of the disease, including paralysis. These antibodies have been found in patients during the preparalytic period but paralysis ensued.

Active Artificial Immunity in Children. The difference between viruses in respect to their immunizing qualities are striking and a method found effective against one is unlikely to be effective against another. Poliomyelitis has been intensively investigated in a search of a method that will be both effective and safe. Flexner[4] came to a conclusion that these two basic requirements were mutually exclusive. Any method that was effective had the danger of producing the disease and all inactivated vaccines failed to protect satisfactorily.

Olitsky and Cox[5] state: "A study of the recorded experiments of the past twenty-five years revealed that poliomyelitis virus itself is not a potent antigen as are some other viruses. Uniform protection is rarely brought about through its use."

Attempts to vaccinate children were unfortunately followed by tragic results. Brodie and Park[6] used a formalized virus which caused the development of antibodies in monkeys and protected a few against intracerebral injections of the virus. This vaccine, as originally described, was noninfectious for monkeys even in large multiple doses and should have been safe whether or not it proved to be a satisfactory immunizing agent.

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[2] Bodian, D. and Howe, H. A.: Neurotropism and Genesis of Cerebral Lesions in Poliomyelitis: Experimental Study, Bull. Johns Hopkins Hospital 68:58-79, Jan., 1941.

[3] Schultz, E. W. and Gebhardt, L. P.: Observations on Therapeutic Value of Specific Immune Serum in Experimental Poliomyelitis, J. Pediat, 6:615-623, May, 1935.

[4] Flexner, S.: Immunity to Human and Passage Poliomyelitis Virus. J.A.M.A., 99:1244-1246, Oct. 8, 1933.

[5] Olitsky, P. K. and Cox, H. R.: Experiments on Active Immunization Against Experimental Poliomyelitis, J. Exper. Med. 63:109-125, Jan., 1936.

[6] Brodie, M. and Park, W. H.: Active Immunization against Poliomyelitis, Am. J. Pub. Health 26:119-125, Feb., 1936.

Kolmer[7] employed virus plus sodium ricinoleate, a mixture which was admittedly infectious for monkeys and which engendered antibodies and also a definite tissue immunity so that the majority of the treated monkeys resisted subsequent attempts to infect them. Among the 10,725 children who received the Kolmer vaccine, and some 2,300 who were treated with the Brodie formalized vaccine, the results in general were critical but at least twelve cases of poliomyelitis (nine with the Kolmer and three with the Brodie) developed in localities where it was not present at the time and under conditions which pointed to the vaccine as the probable source of the infection.

Quoting Leake[8]: "Although any one of these cases may have been entirely unconnected with the vaccine, the implication of the series as a whole is clear."

Passive Immunity. (Convalescent serum, hyperimmune serum). Passive immunization has also had a stormy career, following the early demonstration of immune bodies in the serum of recovered monkeys and human cases. These immune serums were employed in therapeutic attempts. In the monkey disease several observers report that slight benefits may follow when the treatment is begun before the onset of paralysis. No consistently successful results have met the efforts to treat experimental monkeys during the incubation period or after the onset of symptoms.

In the human disease earlier reports of convalescent serum seemed encouraging, especially as a results of the experience in Massachusetts by Aycock, Luther and McKhann, Smith and Kramer.[9] While some of the later observations suggest slightly favorable results, the more carefully controlled series with treatment of convalescent serum presents nothing that supports the use of these serums. This was studied by Kramer, Aycock, Solomon and Thenebe.[10]

Not even the prophylactic use of serum can be supported by the fact that clinical impressions of many good observers are favorable. Seemingly convalescent serum or blood transfusions from adults have more support than any other form of treatment in the acute disease. The latter was brought out by Harmon;[11] Shaw, Thelander, and Limper.[12] According to Schultz and Gebhardt: "Artificially produced antiserum from horses and other animals has given about the same results in human therapy as has convalescent serum."

In all these strivings for a therapeutic agent one is continually reminded of the demonstrable damage to the anterior horn cells found before the onset of paralysis.

Why Some Doctors Use Serum Therapy. I quote Faber[13]: "Although the adverse results of experimental and clinical study have caused the abandonment of convalescent serum therapy in poliomyelitis in many places, it is still customary to use it in many others, partly because belief in its efficacy persists and partly because no other treatment with any resemblance to specificity is available. In communities in which its use is customary, it is hard for the physician skeptical of its value to withhold it; if he should do so and the end-result is paralysis or death, he may be blamed for the outcome. Since the treatment is ordinarily harmless, he is, therefore, apt to give it anyway. The situation is unfortunate. It is not the medical idea to use treatment which is useless."

While serum will probably be continued in use on the basis that it is harmless because there is no satisfactory substitute and in the belief that it may possibly do the individual patient some good, certain suggestions are in order. These are, according to Faber: "First, I believe that there should be no obligation, moral or legal, on the physician to give it; nor should he be held responsible for having withheld it if the outcome of the case is unfavorable; second, there is no sound basis for the use of convalescent serum instead of the serum or whole blood of normal adults. The former is difficult to collect and inordinately expensive . . ."

The chief trouble in the past in regard to evaluation of convalescent serum in the prophylactic treatment of anterior poliomyelitis has been the fact that a satisfactory control series has not been set up. With that in view, some time ago a control series was arranged in the following manner: Two groups were used in this study,[14, 15] Group "A" was treated with human convalescent serum and Group "B" was treated symptomatically and expectantly. Patients were taken irrespective of age, sex or color and were assigned to the different services in order of registration. Each group received treatment as indicated, "A" treated with human convalescent serum; "B", the control group, treated expectantly. Upon analysis of the two types of treatment no appreciable difference was observed.

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[7] Kolmer, J. A.: Vaccination against Acute Anterior Poliomyelitis, Am. J. Pub. Health 26:126-135, Feb., 1936; Active Immunization against Acute Anterior Poliomyelitis with Ricinoleated Vaccine. J. Immunol., 32:341-356, May, 1937.

[8] Leake, J. P.: Poliomyelitis Following Vaccinations against This Disease. J.A.M.A. 105:2152, Dec. 28, 1935.

[9] Aycock, W. L., Luther, E. H., McKhann, C. F., Smith, E. C. and Kramer, S. D.: Preparalytic Poliomyelitis; Further Observations on Treatment with Convalescent Serum. J. Infect. Dis., 45:175-190, Sept., 1929.

[10] Kramer, S. D., Aycock, W. L., Solomon, C. I. and Thenebe, C. L.: Convalescent Serum Therapy in Preparalytic Poliomyelitis. New England J. Med. 206:432-435, March 3, 1932.

[11] Harmon, P. H.: Symptomatic and Pathologic Observations on Animals Inoculated with Virus of Poliomyelitis. Tr. Chicago Path. Soc. 13:231, 1930.

[12] Shaw, E. B., Thelander, H. E., and Limper, M. A.: Treatment of Poliomyelitis; Results in Series of One Hundred and Four Cases. J.A.M.A. 97:1620-1624, Nov. 28, 1931.

[13] Faber, H. K.: Serum Therapy and Vaccination. J.A.M.A. 117:275-278, July 26, 1941.

Errors in the evaluation of serum therapy may be as follows: (1) Mistaken diagnosis attributed as cure. There is no absolute criterion for diagnosis of preparalytic poliomyelitis other than recovery of the virus itself. Preparalytic poliomyelitis is always a presumptive rather than a certain diagnosis, even during an epidemic. (2) The proportion of nonparalytic attacks sometimes increases sharply in the later stages of an epidemic, thus raising the natural chances of recovery at a time when serum will be more generally available and so be given credit for the lower paralysis rate. (3) The dosage of serum is in question. Should 100, 30 or 10 cc. be used and how often?

One is so prone to make observations of certain therapy, willingly remembering the beneficial results and humanly forgetting the unsuccessful results. With a scientifically arranged control series, one is bound to have a more accurate analysis of a study. Interpretations of statistics must be unbiased and impartial and must include a representative number in the study.

As health officers, practicing preventive medicine, we would welcome a technic that would prevent anterior poliomyelitis to the extent such as we already enjoy in the prevention of smallpox, diphtheria, typhoid fever and other diseases. Inasmuch as we do not have that technic at this time, we have no reason to assume the attitude of a defeatist. Research is exerting every effort to bring to us the tools whereby we may prevent the onset of this disease, if not the actual therapy to treat it after its onset in such a way so as to prevent the complications of paralysis.

TREATMENT

Wickman,[16] in 1905, showed conclusively that the disease anterior poliomyelitis and paralysis are not synonymous, but rather that paralysis is a complication of poliomyelitis occurring in some cases. Therefore, generally speaking, one should treat the disease and also the complications if they occur.

All cases of anterior poliomyelitis pass through two or more of the following stages:

1. Acute: (a) abortive, (b) preparalytic.
2. Convalescent: (a) abortive, (b) paralytic.
3. Chronic: paralytic—only.

In determining the type of treatment to be administered during the acute stage of this disease, it is well to consider what has happened to the anterior horn cells in the light of pathology.

Irwin[17] states: "The anterior horn cells respond to the invasion of the virus in at least four ways:

1. Anterior horn cells remain normal, without involvement.
   a. Normal anatomic unit.
   b. Normal physiologic unit.
2. Anterior horn cells temporarily altered in function by edema and congestion of the acute inflammatory process.
   a. Anatomically the unit remains intact.
   b. Physiologic function of cell and neuromuscular unit temporarily shut off.
3. Partial destruction by toxin of virus.
   a. Anatomic continuity temporarily altered.
   b. Physiologic function diminished or absent.
4. Complete destruction.
   a. Anatomic continuity is broken.
   b. Restoration of physiologic function is impossible. In the reparative process the anterior horn cell is replaced by scar tissue. This scar tissue cannot generate or transmit nerve impulses. The axon or nerve fiber disintegrates. The representative muscle fiber undergoes fatty degeneration and ultimate fibrosis. No type of treatment will alter this condition.

The question is asked: "How does the increase in muscle strength come about?" The important point to be emphasized is that any increase in motor power that might occur in a given muscle or group of muscles during convalescence is not due to hyperplasia of either anterior horn cells or muscle tissue. The increase in muscle power comes from two sources, namely, natural restoration of physiologic function of the nerve cells of neuromuscular units temporarily thrown out of action by the acute disease or hypertrophy of the muscle tissue of normal units that have been spared by the infecting organism. In both instances anatomic continuity has not been broken. *Improvement in the spinal cord of this nature will take place regardless of whether or not any treatment is given.*

Irwin states: "I believe that this type of improvement explains the rapid return of muscle power made during the first few weeks after an acute attack and explains why a patient eventually is able to live without a respirator when it was necessary

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[14] Aycock, W. L., Luther, E. H. and Kramer, S. D.: Technic of Convalescent Serum Therapy in Poliomyelitis. J.A.M.A. 92:385-388, Feb. 2, 1939.

[15] Aycock, W.L., Luther, E. H., McKhann, C. F., Smith, E. C. and Kramer, S. D.: Preparalytic Poliomyelitis; Further Observations on Treatment with Convalescent Serum. J. Infect. Dis. 45:175-190, Sept., 1929.

[16] Wickman, I.: Acute Poliomyelitis. Trans. by Maloney, Nerv. and Ment. Dis. Monograph Ser. No. 16, 1913.

[17] Irwin, C. E.: Early Orthopedic Care in Poliomyelitis. J.A.M.A. 117:280-282, July 26, 1941.

to save his life during the height of the acute illness. As soon as the edema and congestion subside, a great number of anterior horn cells return to function."

Thus it is easy to see, if no improvement takes place in the cord, any type of early orthopedic therapy will be of no avail. The result will be the same. The same is also true if the muscle damage is extensive. The muscles will remain useless regardless of what is done.

Further quoting Irwin: "The object of treatment, then, is to protect the normal tissue that remains and to preserve anatomic continuity of all muscle fibers, in which the representative nerve cells are potentially intact but are temporarily unable to function physiologically. When these two aims are properly carried out, all the potential strength of the patient has been preserved and his status, so far as muscle power is concerned, is established.

"Without proper care and protection these muscle fibers are easily stretched even to the point of rupture. They are temporarily without tone, owing to loss of the normal nerve impulse. They are particularly vulnerable during this period. Once ruptured, the muscle fiber is invaded by scar tissue, and when the representative nerve cells regain their physiologic function, a normal wave of muscle contraction is impossible, owing to the break in anatomic continuity. * * * If rupture in muscle fiber occurs, then hypertrophy is forever impossible.

"The orthopedic care during the acute phase is concerned with (1) preservation of all the potential muscle power that has been spared by the acute infectious process, and (2) maintenance of the skeleton in proper alignment while these potential neuromuscular units are being protected. The treatment carried out during this acute phase is designed to salvage everything of value from the wreckage caused by the devastating invasion of the infecting organism."

When all apparent recovery has been made and there is a residual paralysis, the patient is then said to be in the chronic stage and from here on improvement depends on surgery and braces. One big factor in treatment is to encourage the patient to do for himself and thus create greater self confidence.

Consultation (Orthopedic).

Serum Therapy. Convalescent serum therapy has been scientifically studied and scientifically discarded.

Iron Lung Therapy. Many physicians not too familiar with the diagnosis, pathology and clinical course of anterior poliomyelitis seem to struggle under the impression that iron lung therapy is the all-inclusive treatment. I wish to entirely discourage this attitude. The iron lung does have its place in treatment of respiratory paralysis due to the involvement of the intercostal muscles. It is well to remember that *not* all respiratory difficulties arise from involvement of these muscles.[18] The bulbar type of poliomyelitis, involving the higher centers of respiration, do not respond to lung therapy. However, there may be a slight bulbar involvement in combination with an intercostal and diaphragmatic paralysis. In instances of that type lung therapy may be indicated to determine if the patient will respond to treatment.

Important factors in iron lung therapy are as follows: (1) trendelenburg position for drainage of fluids to the throat, (2) aspiration of fluids, (3) gavage of patient, (4) oxygen administration, (5) institution of lung therapy early, (6) splinting of abdomen (corset).

Postural drainage in iron lung therapy is important. The more recent models of the iron lung are so designed that the patient may be placed in trendelenburg position, permitting the drainage of fluids from the respiratory tract. Automatic suction is used to remove fluids from the throat.

At the present time there is an individual by name of Sister Kenny from Australia who has developed a technic with astounding claims attached to it. She reports marvelous recoveries from complications of this disease, anterior poliomyelitis. At present this system is being studied at the Minneapolis General Hospital in Minneapolis.[19] So far only the preliminary report has been published.

The method is very revolutionary in principle, and seems to disregard many cardinal factors now followed in treatment of infantile paralysis. I do not believe the system should be condemned without complete study. However, I do not believe it advisable to accept the Kenny method without accurate and extensive research and evaluation including control series. It is too easy to become enthusiastic and emotional over a new and revolutionary idea and later to find that again it is a "will-o-wisp." Let us watch for the analysis of this method and at all times let us use methods that are *proven* successful in the treatment of anterior poliomyelitis and let us not treat unscientifically.

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[18] Wilson, L.: Use of Respirator. J.A.M.A. 117:278-279, July 26, 1941.

[19] Cole, W. E. and Knapp, M. E.: Kenny Treatment of Infantile Paralysis. J.A.M.A. 116:2577-2580, June 7, 1941.

DIABETES: DISTURBANCE IN ENDOCRINE REGULATION OF BLOOD SUGAR*

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(*Concluded*)

Lecture 3. Endocrine Balance in Carbohydrate Metabolism

We have seen that the diabetic syndrome may be regarded as a disturbance in regulation of the blood sugar level. Insulin is an important hormonal factor in the regulatory mechanism, but it is by no means the only endocrine factor. That many of the glands of internal secretion were involved in an interrelated fashion was apparent to those acute clinicians of past generations who first described and studied endocrine disorders in their patients. They spoke of the "endocrine balance," and some of them constructed rather fantastic charts to illustrate their conceptions It is only within the past two decades, however, that a factual basis for a truer conception has been established.

The pituitary gland, the adrenal cortex and the thyroid are certainly involved in carbohydrate metabolism, and may be concerned in diabetes. The role of the pituitary has seemed particularly important, and it has sometimes been called the "master gland." The pituitary is not really the master gland. It may be called that only in the sense, let us say, that a mere husband may be spoken of as the master of the household. It is true that he may have the final word in many of the affairs of the home, but we all realize that the preliminary words of his wife and children often have an important influence on the final decision of the master. Thus, the pituitary gland, while it may be referred to as the "master gland," is by no means a dictator in the body.

The important actions of the pituitary gland on other glands are known as trophic effects. They can be demonstrated in two ways: (1) by removing the pituitary gland, and (2) by administration of extracts of the pituitary gland. Removal of the pituitary is followed by atrophy and decreased function of the thyroid gland, of the adrenal cortex and of the gonads, whether male or female. On the other hand, injection of potent extracts of the anterior pituitary gland causes hypertrophy and overactivity of the thyroid, the adrenal cortex, the gonads and perhaps also of the pancreas. However, the pituitary is in turn significantly influenced by these glands. Removal of the thyroid, adrenal cortex or gonads is followed by histological changes in the pituitary. These changes have been variously interpreted, and it is not yet quite certain what they mean from a functional standpoint. There can be no doubt, however, that removal of these other glands does affect the structure and function of the pituitary.

This is also true of administration of hormones of these other glands; for example, one of the hormones secreted by the pituitary is the so-called "thyrotropic hormone" which increases the size and activity of the thyroid gland. Removal of the thyroid gland is followed by an increase in the amount of thyrotropic hormone in the blood. We may interpret this experimental finding by saying that one of the functions of the anterior pituitary gland is to keep the activity of the thyroid gland at a normal level, and when one removes the thyroid, the pituitary attempts to compensate for lack of thyroid hormone by excreting more thyrotropic hormone.

The action of other glands on the pituitary is also well illustrated by the sex hormones. It is known that an excess of estrogenic substance, which is normally secreted by the ovary, can suppress the activity of the pituitary gland. In fact, during pregnancy the placenta becomes an important hormonal organ and probably takes over some of the functions of the pituitary as well as of other glands. It is the placenta which is the source of the anterior pituitarylike hormone which is excreted in the urine of pregnant women, and it is for this placental hormone that we test in determining the existence of pregnancy by the Aschheim-Zondek and Friedman methods. The placenta also excretes estrogenic hormone and progesterone, both ordinarily derived from the ovary. The secretions of the placenta may probably also compensate for the lack of adrenal cortical hormone. Adrenalectomized animals will die within a more or less definite number of days, if not treated with adrenal cortical extracts. Nevertheless, if these animals are adrenalectomized during pregnancy they do not require any treatment until after the pregnancy has been terminated.

It is clear from what I have said that, while the pituitary may be more generally important than some of the other glands, it is not merely because it dominates them. In reality, it is influenced by all the other glands and sometimes even displaced as in pregnancy. The importance of the pituitary lies in the fact that it coordinates the functions of the other glands. It receives messages as to the state of function of these other glands through the bloodstream and probably also through the central nervous system, and responds by increasing the activity of one gland and decreasing the activity of another, according to the needs of the body. It might well be called the "executive secretary of the endocrine system."

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*Read before Annual Meeting of Pacific Northwest Medical Association, Spokane, Wash., June 25-28, 1941.

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The relationship between the pituitary gland and carbohydrate metabolism, diabetes in particular, has been known clinically for a very long time. As early as 1908 Borchardt recognized the large incidence of diabetes in acromegalic patients. American clinicians (Goetsch, Cushing and Jacobson) wrote on this subject in 1910, and the relationship continues to be the subject of clinical writing to the present time. It seems certain that, whereas the incidence of diabetes in the general population is about one half of one per cent, it occurs amongst acromegalic patients in about 25 to 40 per cent of cases. Conversely, in hypopituitarism or Simmond's disease hypoglycemia is often a feature, while Cushing's syndrome or basophilic adenoma of the pituitary is often characterized by hyperglycemia.

The significance of the above clinical observations has now been indicated by the work of physiologists. Curiously enough, the earliest work in this direction was rather misleading, as for example, when it was found that an extract of the posterior lobe of the pituitary gland caused a rise in blood sugar level as well as in blood pressure. More recently, however, the blood sugar-raising properties of extracts of the posterior pituitary gland (pituitrin) have been regarded as being of greater pharmacologic than of physiologic importance. The remarkable work of the South American physiologist, Houssay, and that of subsequent workers all over the world, has shown that it is the anterior lobe of the hypophysis which is important in regard to carbohydrate metabolism.

This relationship was shown by the two chief methods mentioned before which are the basic methods of endocrinologic investigation, namely, removal of the gland on the one hand, and administration of extracts of the gland on the other. Effects of removal of the anterior lobe of the pituitary gland were first shown by Houssay on toads. The work was later repeated and amplified on dogs, and finally most of the effects which I am about to describe have been adequately illustrated by Nature's own experiments on human beings.

Effects of removal of the anterior lobe of the hypophysis in experimental animals or of the destruction of the gland by disease in human beings are as follows:

1. Lowering of the blood sugar level. The blood sugar of the hypophysectomized dog under conditions of adequate nutrition is about 20-30 mg. per cent lower than that of the normal animal.
2. The hypoglycemic effect of fasting. A normal animal or human being may be fasted indefinitely with little or no effect on the blood sugar level. As a matter of fact, there may be no significant effect until a relatively short time before death from starvation when the blood sugar may fall precipitously. However, in the absence of the hypophysis fasting is accompanied by rapid development of hypoglycemia so that the animal may die within a relatively short time in hypoglycemic convulsions.
3. Increased sensitivity to insulin. A small amount of insulin which would produce no noticeable effect on a normal animal will, after the removal of the hypophysis, cause prolonged and even fatal hypoglycemia.
4. Decreased excretion of nitrogen in the urine. This, of course, indicates a decreased breakdown of body protein and is consistent with the next effect to be described.
5. A 40 per cent decrease in the total metabolism of the body. This is a much greater decrease in metabolic rate than is observed in even marked cases of hypothyroidism.

One of the most revealing experiments involving removal of the hypophysis has been that in which hypophysectomy was performed on completely depancreatized animals. Such preparations are often referred to as "Houssay animals," in honor of the investigator who first prepared them. It must be remembered that, according to the orthodox ideas about diabetes these animals are completely unable to utilize sugar to begin with; nevertheless, when the hypophysis is removed, there is marked amelioration of the diabetic state, so much so that the animal may live without insulin for many months. The blood sugar is lower than in animals with only the pancreas removed. In the depancreatized animal without treatment the blood sugar may rise to a maximum of 500 mg. per cent or more, while in the "Houssay animal" it seldom rises above 300 or 350 mg. per cent, no matter how long the animal has gone without insulin. The "Houssay animal" has glycosuria which is less marked than in the depancreatized animal, but there is little or no ketosis. There is a low D:N ratio and the respiratory quotient may be elevated above the "diabetic" level. The "Houssay animal" is also very sensitive to insulin.

Effects of injection of extracts of the anterior lobe of the pituitary gland are in general the opposite of those which we have described for removal of the gland. The extracts restore the blood sugar level of hypophysectomized animals to normal. They prevent or relieve the hypoglycemic effects of fasting. The administration of these extracts to hypophysectomized-depancreatized animals precipitates severe diabetes with ketosis. If the extracts are given to perfectly normal animals, there is a temporary hyperglycemia with glycosuria and ketosis.

A few years ago Dr. F. G. Young in England attracted world-wide attention by producing permanent diabetes in normal dogs by administration of increasing massive doses of pituitary extracts over periods of weeks or months. By "permanent diabetes" I mean that not only did his animals show hyperglycemia and glycosuria while the extracts were being given, but some of them remained diabetic even after the treatment was stopped. This seemed of great potential importance because it offered a type of experimental diabetes which resembled human diabetes in that the pancreas had not been removed. However, this particular hope has not been justified for it was soon found, when Young's dogs were examined postmortem, that there was a marked degeneration of the islets of Langerhans of the pancreas. In other words, his permanently diabetic animals more closely resembled the depancreatized animal than the human diabetic, in whom the pancreas usually does not show any definite pathologic change. Thus, we cannot yet jump to conclusions regarding the role of the pituitary gland in diabetes mellitus in humans, although there are indications that it does play an important part.

It is evident from what I have told you that the hypophysectomized animal, even when completely depancreatized, has difficulty in maintaining its blood sugar level unless food is constantly available to it. This is in spite of the fact that the hypophysectomized animal may have just as good stores of fat, protein and carbohydrate in its body at the beginning of its fast as does the normal animal. The difficulty must, therefore, lie in one of two directions; either the hypophysectomized animal is unable to make enough blood sugar from its body stores, or it must utilize sugar so rapidly that the normal rate of sugar formation becomes inadequate. The latter possibility seems unlikely when one considers the 40 per cent decrease in total metabolism which this animal exhibits. It is quite evident that a sharp decrease in the capability of the liver to supply sugar would explain the hypoglycemia much more reasonably. Let us examine some evidence as regards the ability of the hypophysectomized animal to make sugar.

Figure 10 shows that the hypophysectomized dog has no difficulty in making blood sugar from ingested protein, but cannot maintain his blood sugar level when fed on fat or when no food is taken. I would also like to point out that the blood sugar level falls much more rapidly after one day than aften ten days of protein feeding. In other words, the state of nutrition of the animal is important and there is some suggestion that some of the fed protein may be stored in a form in which it can be readily converted to carbohydrate.

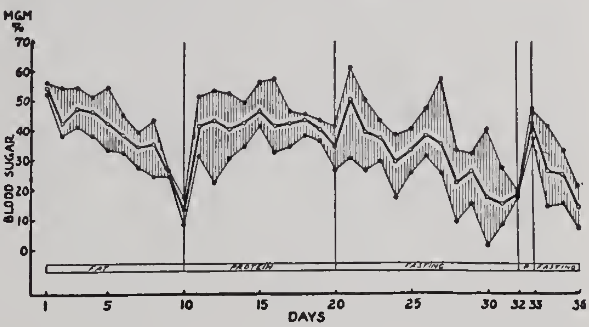

Fig. 10. Effect of exclusive fat or protein feeding and of fasting on the blood sugar level of the hypophysectomized dog. The shaded area represents the spread of the blood sugar values and was obtained by plotting the maximum and minimum blood sugar values for each day. The central heavy line indicates the average of all the blood sugar values obtained on each day.

In the experiment represented in this figure, the notations as to the material fed represent: Fat—11 grams per kilogram body weight per day, in the form of olive oil, by stomach tube; protein—11 grams per kilogram body weight per day, in the form of lean meat.

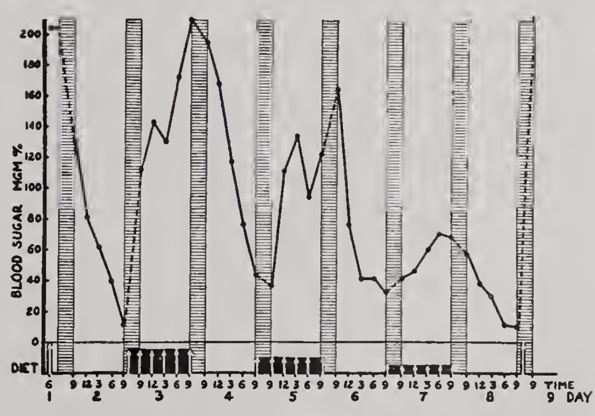

Fig. 11. Influence of the amount of protein intake on the blood sugar level of the hypophysectomized-depancreatized dog. (This is the same animal as depicted in figure 10 before pancreatectomy.) The black areas represent days upon which the animal was fed; the superimposed white arrows indicate the meals. The shaded strips are a foreshortened representation of the night periods, between 9:00 p.m. and 9:00 a.m.

The total amount of food given on the respective days of feeding was as follows: Day 1, 400 grams lean meat, 60 grams cane sugar, 120 grams raw pancreas; day 3, 378 grams protein as lean meat; day 5, 168 grams protein; day 7, 90 grams protein; evening of day 8, same as day 1.

Figure 11 shows that the hypophysectomized-depancreatized animal suffers from the same disturbance as does the hypophysectomized animal. This "Houssay animal" had been maintained at a blood sugar level of about 200 mg. per cent without insulin by a diet of meat, raw pancreas and sugar. It was then fasted. Within one day its blood sugar fell from 200 to 100 mg. per cent. And we know from experience that it would have died in hypoglycemic convulsions, had the fasting continued. Instead, it was given decreasing amounts of protein at intervals with fasting periods in between. The first rise in the blood sugar level followed the administration of 378 grams of protein as lean meat. The second rise was caused by 168 grams and the third by 90 grams. The final rise was due to the resumption of its previous diet of meat, sugar and raw pancreas. It is apparent that the animal readily forms sugar from ingested protein and the amount of sugar which it makes is proportionate to the amount of protein which it receives. It is also apparent that, when protein is not ingested, the animal cannot use its own stores of body protein to maintain its blood sugar level. There is also evidence, which I will not go into today, which shows that the hypophysectomized animal also differs from the normal in that it cannot make sugar from either ingested fat or its own stores of adipose tissue.

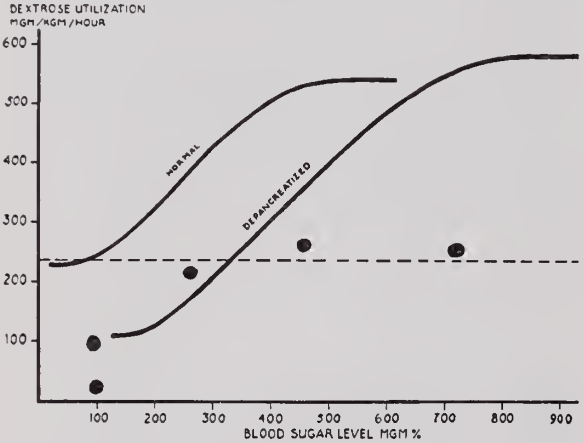

Fig. 12. Relation between blood sugar level and rate of sugar utilization in the hypophysectomized dogs. The S-shape curves for normal and depancreatized animals are the same as in figure 4 and are included for comparison. Each black dot represents an experimental result in a different hypophysectomized dog.

(Erratum. In Lecture 2, published in the November issue, figure 4 appeared identical with figure 12. In the reprints the correct figure 4 will be inserted).

It was inevitable that the other possible explanation of hypoglycemia in hypophysectomized animals should have been advanced by certain investigators. Thus, Fischer, Russell and Cori found that hypophysectomized rats lost their stores of body carbohydrates much more rapidly than did fasted normal rats. They concluded that the hypophysectomized animals used more carbohydrate than did normals. However, these workers did not take into account the amounts of sugar which the liver was making while their experiments were in progress. It is obvious that, if the hypophysectomized animal formed much less sugar than the normal, but utilized the same or even smaller amounts of sugar, it could still show a greater depletion of its carbohydrate stores on fasting. In order to study this problem properly, it is necessary to eliminate or control one side of the dynamic balance while the other side is observed. This we have done in the same manner in which we studied the utilization of carbohydrate by the normal and diabetic animals, namely, by working with liverless animals in which the blood sugar level was maintained by a steady injection of dextrose from a constant injection pump.

Our results are illustrated in figure 12. The S-shaped curves for the normal and the depancreatized animals were derived from previous experiments which I have already described. The black dots represent results in completely hypophysectomized animals. They show conclusively that hypophysectomized animals use much less sugar than the normal animal at any given blood sugar level. It is, therefore, apparent that hypoglycemia of fasting in the hypophysectomized animal and amelioration of diabetes in the "Houssay animal" are not due to an increased utilization of sugar and must be due to a decreased ability to make sugar.

If we now refer back to the mechanical analogy which we used to illustrate the dynamic balance between the liver and the peripheral tissues (figure 1.), we may readily visualize the true state of affairs after hypophysectomy. We have discussed evidence to show that there is a decrease in both the rate of formation of sugar and the rate of utilization of sugar in this condition. If these were both diminished equally, there would be no change in the blood sugar level. What actually happens is that the rate of formation of sugar is decreased to such an extent that even the diminished rate of utilization of sugar is greater than the rate at which it can be supplied. Hence, the fall in blood sugar level and the marked decrease in carbohydrate stores upon fasting, and hence the important influence of ingested protein or carbohydrate on the blood sugar level.

There is a practical point worthwhile mentioning at this juncture, You have undoubtedly heard of attempts to treat clinical diabetes by suppressing the pituitary gland either by roentgen treatment over the hypophysis or by large doses of estrogenic hormone. This is a vain hope. I have already pointed out that experimental diabetes is not cured by removing the hypophysis for, when the animal is allowed to eat, the blood sugar may be maintained at 300 to 350 mg. per cent with glycosuria. It is true that there is little or no ketosis and that the diabetes is more easily managed and with smaller amounts of insulin. But when one considers all the other vital functions associated with the pituitary gland, it is quite apparent that it is not justifiable to attempt to interfere with its function unless one does so incidentally in removing a tumor which is in itself threatening life. After all, if a diabetic patient already requires insulin for his treatment, it is much more reasonable to treat him with larger doses of insulin than to endanger his life for the sake of getting along with a little less.

The difficulty in maintaining his blood sugar level during fasting is not the only carbohydrate disturbance in the hypophysectomized animal. You will have noted that even when well-fed his blood sugar is about 20-30 mg. per cent lower than that of the normal dog. In other words, he regulates at a lower level or, in terms of our thermostat-furnace analogy, the thermostat is set down to a lower temperature. Thus, if we regard insulin as a spring on one side of the thermostat (tending to lower the setting), we must regard the anterior pituitary as a balancing spring on the opposite side (tending to raise the setting). If we remove the "insulin spring," the pituitary pulls the thermostat all the way over to its side, and vice versa. But what would happen if both springs were removed at once? We might expect that the thermostat would still operate (though perhaps poorly) at some intermediate setting, in spite of the complete absence of insulin and of anterior pituitary hormone. This is exactly what we have been able to show actually happens, for we have demonstrated normal dextrose tolerance curves in hypophysectomized-depancreatized animals which have not received insulin for months.

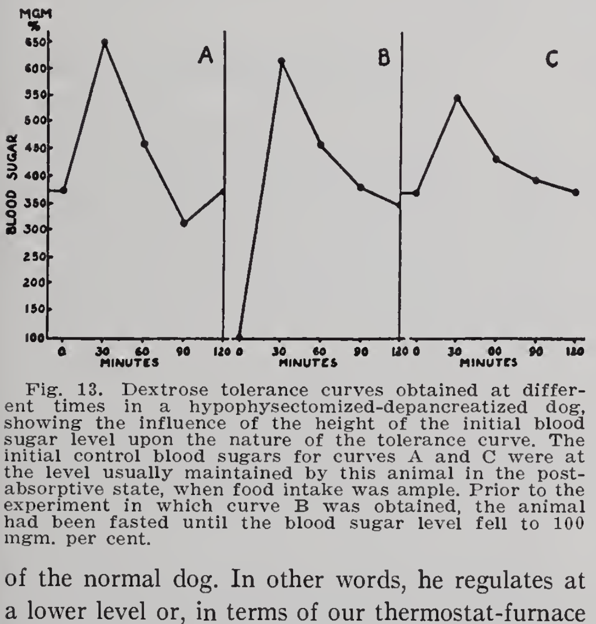

Fig. 13. Dextrose tolerance curves obtained at different times in a hypophysectomized-depancreatized dog, showing the influence of the height of the initial blood sugar level upon the nature of the tolerance curve. The initial control blood sugars for curves A and C were at the level usually maintained by this animal in the post-absorptive state, when food intake was ample. Prior to the experiment in which curve B was obtained, the animal had been fasted until the blood sugar level fell to 100 mgm. per cent.

These animals differ from the normal only in that regulation of the blood sugar occurs at a level of about 350 mg. per cent (figure 13, curves A and C). When the blood sugar is lowered from this level by fasting (figure 13, curve B), the administration of sugar first raises the blood sugar up to the 350 mg. per cent level, whereupon the normal dextrose tolerance curve follows. This is final evidence that the blood sugar regulating mechanism is intrinsic in the liver, and that insulin and the other hormones influence it but are not an integral part of it.

Since I have gone into such detail as to the influence of the anterior pituitary gland, it will not be necessary for me to do likewise as regards the adrenal cortex. This is not to minimize its importance, but it will suffice for our present purposes to say that its influence on carbohydrate metabolism is similar to that of the anterior pituitary. Indeed, it is generally recognized that some of the activity of the pituitary is exerted by way of the adrenal cortex. We may, therefore, turn our attention to the thyroid.

It has long been recognized clinically that there is a relationship between the thyroid gland and carbohydrate metabolism. Many cases of hyperthyroidism show mild hyperglycemias; in many instances hypothyroid patients show mild hypoglycemias. We know that hyperthyroidism occurring coincidentally with diabetes aggravates the latter and makes it more difficult to treat. Conversely, we also know that the removal of a toxic goiter from a diabetic patient may cause marked amelioration of the diabetic syndrome. Curiously enough, some of the experimental work on this subject has tended to obscure rather than clarify the relationship. The ordinary laboratory animals, from which the thyroid has been removed in order to study its effects on carbohydrate metabolism, have been the cat and the dog. It was found that thyroidectomy in these animals had little effect on their carbohydrate metabolism or on the severity of their diabetes after pancreatectomy.

This was the state of affairs until it occurred to us that Marine, some years ago, had shown that about 90 per cent of all cats and dogs had aberrant thyroid tissue. That is to say, removal of the thyroid tissue found in the necks of these animals does not cause hypothyroidism. We, therefore, approached the problem from another angle. We removed the hypophysis from dogs and waited until the metabolic effects of this operation which I have already described had appeared. We then treated these hypophysectomized animals with thyroxin. We found that the thyroxin enabled them to maintain their blood sugar level indefinitely while fasting.

Figure 14 illustrates such an experiment. At the beginning of the experiment this animal was maintaining a blood sugar level of about 50 to 55 mg. per cent. When food was withdrawn, the animal became hypoglycemic within two days. Administration of thyroxin restored the blood sugar level not only to that which it maintained while being fed, but to levels characteristic of a normal animal. These results leave no doubt that secondary atrophy of the thyroid gland plays an important part in the carbohydrate disturbance which follows hypophysectomy.

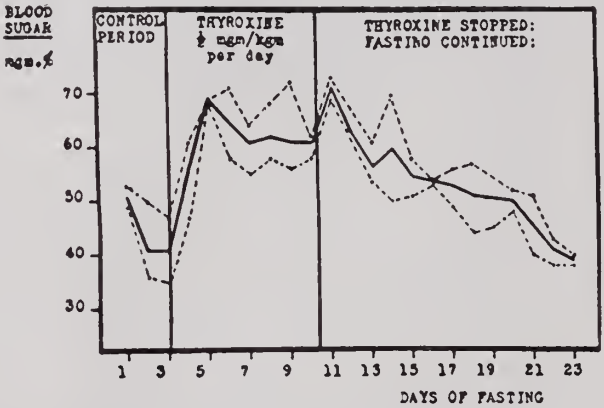

Fig. 14. Maintenance by thyroxine of a normal blood sugar level in a fasting hypophysectomized dog. The upper and lower broken lines, respectively indicate the maximum and minimum blood sugar levels for each day. The heavy continuous line indicates the mean value for all the blood sugar estimations (at least 3 per day) made on each day.

Figure 15 indicates the manner in which thyroxin alleviates the carbohydrate disturbance of hypophysectomized animals. It shows that within two days after beginning of the treatment with thyroxin, the nitrogen excretion of the hypophysectomized animal rises so that it coincides with the nitrogen excretion of normal animals. In other words, it may be concluded that increased blood sugar formation caused by thyroxin is maintained at the expense of protein. You will remember that I have already shown evidence that the hypophysectomized animal has no difficulty in making sugar from protein which it receives via the gastro-intestinal tract. It must be pointed out, however, that such protein actually reaches the blood stream in the form of amino-acids. It would be, therefore, more correct to say that the hypophysectomized animal has difficulty in forming sugar from protein but has no difficulty in making it from amino-acids. It seems likely, therefore, that the thyroid hormone produces its effect by facilitating the breakdown of the body protein to amino-acids.

One practical consideration arises from the above experiment with thyroxin, namely, its possible value in certain cases of spontaneous hypoglycemia. It is not within the scope of this talk to analyze the different causes of spontaneous hypoglycemia, except to say that certain cases may be due to hypopituitarism. In such cases treatment with thyroxin or thyroid extract might be the simplest and most effective therapy.

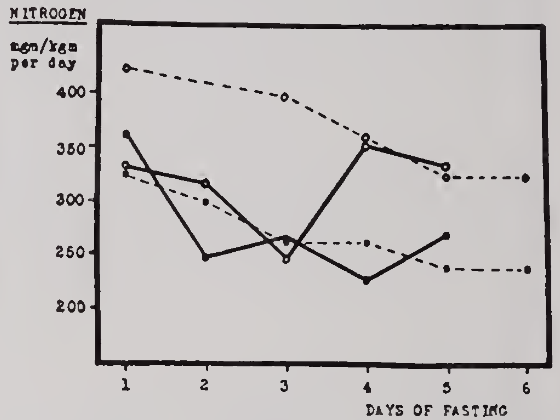

Fig. 15. Influence of thyroxine on the total urinary nitrogen excretion of hypophysectomized dogs. The broken lines are taken from the figure published by Houssay (18) representing the results of Braier on fasting hypophysectomized dogs (solid squares) as compared to fasting normal dogs (hollow circles). The heavy continuous lines represent our own results on fasting hypophysectomized dogs (solid squares) as compared to thyroxine-treated fasting hypophysectomized dogs (hollow circles). Note that our results on fasting hypophysectomized dogs are similar to those of Braier on similar animals. After the first 3 days of fasting the results in our thyroxine-treated hypophysectomized dogs are similar to those in Braier's fasting normal dogs.

Having reviewed, in rather sketchy outline, the relation of the pancreas, pituitary, adrenal cortex and thyroid to carbohydrate metabolism and to each other, it is now desirable to attempt to visualize an integrated picture of the whole system. The mechanical analogy in figure 16 may be helpful.

In this analogy the position of the liver within the surrounding frame may be taken to represent its finely balanced adjustment in supplying just that amount of sugar which is being utilized by the tissues and in ceasing its production of sugar as soon as the blood sugar level rises above normal. It may be seen that insulin is a force exerted in one direction, while the anterior pituitary is an equal and opposite force exerted in the other direction. The thyroid and adrenal cortex are represented as subsidiary forces controlled by the pituitary but going in the same direction. It will be realized that this balance of opposing forces is conducive to a very sensitive and fast-acting adjusting mechanism. It will also be evident that the same effects may be produced in different ways. A weakening of the spring representing the pancreas results in diabetes. But the same result may be achieved by tightening the springs representing the opposing glands. Thus, the fact that administered insulin restores the balance and alleviates the diabetes does not necessarily mean that the original disturbance was caused by lack of insulin. There may have been a normal amount of insulin present, together with an overaction of the opposing hormones. Time will tell whether we may yet have to become accustomed to speak of pituitary diabetes, thyroid or adrenal cortical diabetes, etc.

I don't wish to leave you with the impression that the liver is the only organ having to do with carbohydrate metabolism or with diabetes. I have stressed its role because some aspects of the subject are relatively new and because there can be no doubt that the liver is the most important organ as regards regulation of the blood sugar. It must be pointed out, however, that the peripheral tissues, particularly the muscles, also play some part in regulation of the blood sugar. I have shown you evidence that the rate of utilization of blood sugar by the extrahepatic tissues depends upon the height of the blood sugar level. That is to say, when the blood sugar rises, some of the extra sugar present in the circulating blood is disposed of by extra sugar utilization. In addition, it is hardly necessary to point out that storage of sugar in both liver and muscles also contributes to blood sugar regulation.

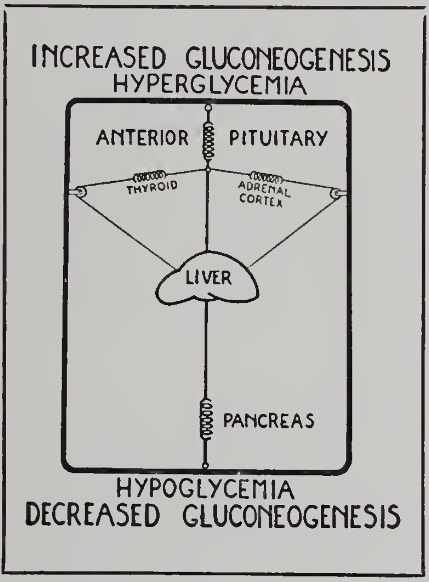

Fig. 16. Mechanical analogy of the influence of endocrine balance on carbohydrate metabolism in the liver.

I also wish to avoid the impression that we now know all about regulation of the blood sugar. You may have noticed that I was careful to avoid any explanation of how the balanced activity of the various endocrine glands is maintained. I did so for the simple reason that I do not know. And while I am on the subject of what we *don't* know, it is important to mention that we are still ignorant of the relationship (if any) between the disturbed carbohydrate regulation in diabetes and the high incidence of cardiovascular degeneration. This is an extremely important problem, since its solution may shed light on the ravages of normal ageing. However, even our present knowledge of the endocrine balance does give us a great deal of insight into the nature of endocrine action and its effect on carbohydrate metabolism. And, what is perhaps of greater importance, our present knowledge holds out a great deal of hope for a more perfect understanding in the future.

The following are recent review articles, which contain detailed references to the evidence quoted in these lectures and to related work:

Soskin, S. and Mayer H.: Physiologic Basis of Intravenous Dextrose Therapy for Disease of Liver, Arch. Int. Med. 64; 1265-1270, Dec., 1939.

Soskin, S.: Liver and Carbohydrate Metabolism. Endocrinology, 26; 297-308, Feb., 1940.

Soskin, S.: Blood Sugar: Its Origin, Regulation and Utilization, Physiol. Rev., 21; 140-193, Jan.. 1941.

Soskin, S.: Metabolic Function of Endocrine Glands, Ann. Rev. Physiol., 3; 543-571, 1941.

SYNTHETIC VITAMIN K AND TUBERCULOSIS

The possibility that synthetic vitamin K may be an addition to the armamentarium in the control of hemoptysis (the spitting of blood) in certain cases of tuberculosis of the lung is suggested by R. F. Sheely, M.D., White Haven, Pa., in *The Journal of the American Medical Association* for November 8 as the result of investigation of the prothrombin or blood clotting factor in patients with this complication.

Dr. Sheely says that the incidence of hemoptysis has been reported as ranging from 20 to 80 per cent and that one physician found that 33.8 per cent of 1,000 patients admitted to a sanatorium because of tuberculosis of the lung had the condition before discharge or death. Vitamin K is known as the antihemorrhagic vitamin.

In 106 cases of pulmonary tuberculosis, the prothrombin concentration in the blood was studied by Dr. Sheely. A significant deficiency of prothrombin was found in 51 of the patients, the concentration being less than 59 per cent of normal. Fifty of these had far advanced disease.

"The status as to prothrombin level appeared to coincide with the clinical and roentgenologic (x-ray) status of the majority of the patients," he reports.

"It is suggested that the prothrombin concentration should be determined in every case of hemoptysis in pulmonary tuberculosis. In 4 cases of frank hemoptysis with associated prothrombin deficiency, the elevation of the blood prothrombin level on the administration of vitamin K, orally and parenterally (beneath the skin), was a likely factor in the control of hemoptysis."

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STILBESTEROL IN TREATMENT OF THE MENOPAUSE*

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Stilbesterol is a new, inexpensive synthetic estrogen. It was introduced in 1938 by Dodds and his coworkers. Now that it is generally available, it makes the treatment of menopausal discomforts more practical and economical. Although it appears to duplicate in most respects the physiologic activity of the natural estrogens, chemically stilbesterol is not related to estrone or estradiol which are the natural estrogens. It is interesting to note that there is a slight similarity in the graphic formulae of stilbesterol and the phenanthene nucleus of the natural estrogens.

Since its introduction three years ago, stilbesterol has been extensively studied pharmacologically and clinically in this country and in Europe. Reports are conflicting as to the incidence of nausea, vomiting and gastrointestinal upset; however, most investigators definitely agree that within the limits of therapeutically adequate dosage there is no danger of intrinsic organic or tissue toxicity. (M. E. Davis administered doses as high as 1100 milligrams to women with terminal carcinoma, and postmortem study of their organs showed no significant changes. Emery and Page, in careful animal studies, failed to find evidence of tissue damage except where doses were 50 to 100 times the therapeutic range. Priscilla White has given doses of 120 milligrams a day to many pregnant patients with no evidence of toxicity.)

Pharmacologically stilbesterol is freely absorbed from the gastrointestinal tract. It is slowly metabolized. According to Engle, it is not conjugated in the liver, but a small amount is excreted as benzoic acid. The estrogenic activity of absorbed stilbesterol continues over a considerably longer period of time than is the case with natural estrogens. Excretion occurs promptly in the urine and stool with a high percentage unchanged. Apparently the body does not inactivate stilbesterol as readily as it does estradiol and estrone. When given parenterally, according to Mazer, 2 milligrams has an estrogenic activity lasting as long as five days.

Estimations by various investigators vary as to the potency of stilbesterol in comparison to the natural estrogens. One milligram of injected stilbesterol is thought by Kurzrok to equal 2.5 milligrams of estrone or .5 milligrams of estradiol benzoate. Mazer reports 1 milligram the equivalent of 5 milligrams of estrone or 1 milligram of estradiol benzoate. Mazer also claims the drug is five times as effective parenterally as when given by mouth. From the experience with the series of patients herein reported, it would seem that 1 milligram of stilbesterol given orally is at least the equivalent of, and is probably more effective than, 1 milligram of estrone or ⅓ milligram of estradiol benzoate given subcutaneously. This estimation is based on subjective response and vaginal smear changes in closely observed patients, some of whom were previously relieved of their symptoms by natural estrogens.

The physiologic effects of stilbesterol seem to duplicate those of the natural estrogens, both in animals and in man. Anterior pituitary secretions and ovarian functions are suppressed. Endometrial and vaginal epithelial growth are stimulated. Vaginal pH is consistently lowered.

Suppression of anterior pituitary function is important in treatment of the menopause. In fact, there is much evidence pointing to pituitary hyperactivity as being the crux of the whole matter in the production of menopausal symptoms. Meigs, Drips and others believe that all women who have hot flushes have pituitary hyperactivity and hence high urinary prolan levels, although it must be admitted that not all women with high prolan levels have hot flushes.

Treatment of menopausal symptoms and suppression of anterior pituitary secretions depend on maintaining as constant a level of blood estrogen as possible. Sudden decrease in blood estrogen results in stimulation of the pituitary. Natural estrogens, given by injections, produce a rapid rise and fall of estrogenic activity, and this results in stimulation of pituitary function. Stilbesterol, by virtue of oral administration and sustained action, has a distinct advantage due to the fact that a more steady level of estrogenic activity can be maintained with greater efficiency.

It is likely that the symptom of sinking spells, so common in the menopause, is a result of pituitary hyperfunction. When stimulated by a sudden decrease of blood estrogen, the gland does not discriminate and put out only ovarian-stimulating hormones. Thyrotropic, adrenatropic and other pituitary hormones are released. The presence of a sudden flood of these factors may upset blood sugar and blood adrenalin levels and result in feelings of temporary weakness and semicollapse.

The series of cases observed in this report comprise seventy-eight patients to whom stilbesterol was administered (fig. 1). Sixty-five of these were treated in an effort to relieve subjective symptoms of the menopause; five had primary indications of retrogressive vaginitis; and the remainder, functional menstrual disorders. In all cases stilbesterol was given in one milligram pills. Early in the series uncoated tablets were used, but the majority of the patients received enteric-coated pills. An effort was made to determine indications for the drug as well as its ability to relieve subjective symptoms of the menopause, to note response of the vaginal epithelium according to the method of Papanicalou and Shorr, and to determine the ability of the patients to tolerate the medication.

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*Read before a Meeting of King County Medical Society, Seattle, Wash., Sept. 15, 1941.

	Pts.	*Impr.*	*Fail.*
Specific indications	38	34	4+
Doubtful indications	27	8	19
Atrophic vaginitis	5	5	0
Other indications	8	—	—
Spontaneous menopause	54	32	22
Artificial menopause	16	15	1
Patients vomiting	3+		

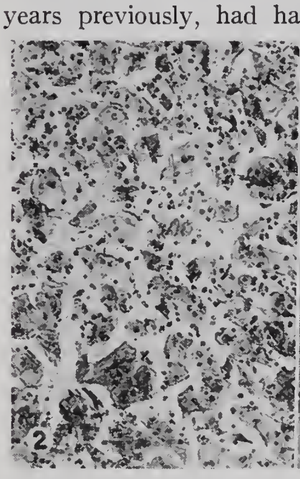
Fig. 1. Seventy-eight Stilbesterol Patients.

As most of the criteria for evaluation of results in a symptomatic condition such as this are subjective, forms were prepared listing the symptoms of the menopause. Prior to beginning administration of stilbesterol, the symptoms were graded in severity on a scale of one to four; and following administration of the drug, the amount or lack of improvement as to each symptom was noted. Symptoms listed were those cited by Hawkinson as characteristic of the menopause, namely subjective nervous tension, menstrual irregularity, flushes, chills and sweats, irritability and excitability, fatigue and lassitude, depression and crying, insomnia, palpitation and dyspnea, vertigo and scotomata, decrease of memory and concentration, frigidity, somatic numbness and tingling, occipitocervical ache and arthritic pains. Vaginal smears, blood-pressure readings and vaginal pH were followed in many of the patients under treatment. The patients were observed for a period ranging from two to eleven months. Of the menopausal patients, 77 per cent had a spontaneous menopause and 23 per cent were surgical or radiologic castrates. The ages of the patients ranged from thirty-three to sixty-seven years. Due to the necessity of individualizing patients of this type, it hardly seems adequate to report the results only categorically; many interesting data were observed in isolated cases relative to the treatment of menopausal symptoms with this drug, from which reliable generalizations can be made.

Among the seventy-eight patients treated with stilbesterol for relief of subjective discomfort, there was some variation in the nature and severity of symptoms. Of thirty-eight patients who complained chiefly of circulatory symptoms, that is, flushes, sweats, chills and sinking spells, not one failed to be relieved. Hot flushes were relieved in every instance within two weeks on one milligram daily. Even the three patients who had gastrointestinal symptoms of a sufficient degree to discontinue the drug were relieved of hot flushes temporarily. Hence, hot flushes and vasomotor symptoms are the best indication for use of the drug.

The second most notable improvement occurred in the symptoms of subjective tension and inability to relax. These usually occurred synchronously with hot flushes. Based upon the patient's own estimation, definite relief occurred in 75 per cent. Patients complaining primarily of nervousness, emotional instability, melancholia, mental confusion, anxiety and insomnia manifested the poorest response.

However, one patient, age fifty-seven, who ten years previously, had had hot flushes and other symptoms which cleared up without treatment within two or three years, was recently given several "shots" by her physician in an effort to overcome postinfluenzal asthenia. The result was striking in that she promptly developed a return of severe menopausal symptoms together with marked anxiety neurosis without insight and characteristics of involutional melancholia. Stilbesterol, one milligram a day for one month, resulted in complete readjustment and improvement in the vaginal smear (figs. 2, 3). Dosage was reduced to three milligrams a week, and ten weeks follow-up to the present has been uneventful. It is apparent that we must use caution in prescribing this potent drug, where indi-



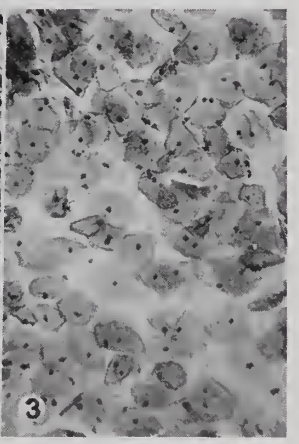


Fig. 2. Vaginal smear (Shorr modification of Masson stain) prior to treatment, showing many leukocytes and basal cells with large nuclear elements.

Fig. 3. Smear after ingestion of 1 mg. stilbesterol daily for three weeks, showing clean cut cornified epithelial cells with small nuclei and absence of leukocytes and debris.

cations are doubtful. Best results will be obtained in relief of hot flushes.

The sixteen patients artificially precipitated into the menopause by surgery or radiation therapy all responded with mitigation of symptoms except one, whose chief symptom was headache which was not relieved by stilbesterol or by theelin. Two patients were started on stilbesterol on their first postoperative day, and after three months neither has had any of the usual symptoms with which all surgeons are so familiar. Dosage was gradually reduced in these cases to one milligram every forty-eight or seventy-two hours.

Excellent results were achieved in five cases of retrogressive vaginitis after two or three weeks treatment with one milligram a day. These patients were all over forty-five; and two who had trichomonas infestations had been treated locally for many months without results. There was marked local and general improvement, increase in thickness and cornification of the vaginal mucosa. Using nitrazine paper as the indicator, a lowering of vaginal pH which occurs with stilbesterol was noted. This probably had much to do with these favorable results in vaginitis.

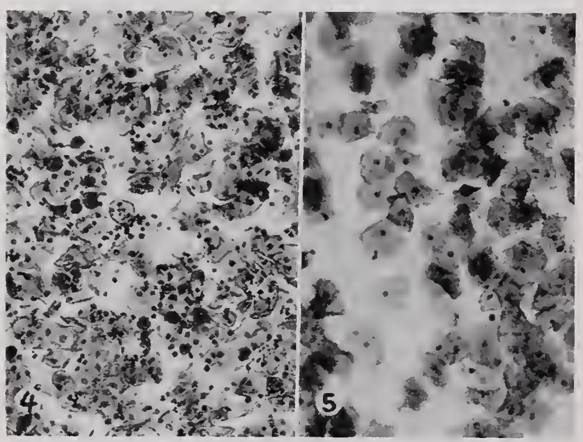


Fig. 4. Patient, age thirty-six, eighteen months after surgical castration. Smear prior to therapy, similar to figure 2 with typical "dirty" apearance characteristic of estrin deficiency.

Fig. 5. Smear after 1 mg. stilbesterol daily for two months, showing tendency of margins of cornified cells to curl and fold, characteristic of overtreatment.

There were some failures to effect improvement in the series of patients, but in most cases these occurred when specific indications for specific treatment were lacking. Several patients with nervousness not due to the menopause were made temporarily worse by the treatment.

Repeated vaginal smears taken in twenty-five patients showed the usual response of cornification of vaginal cells. Smears were valuable chiefly for estimating dosage. Interpretations of the smears are equivocal, and, as Papanicalou has reported, are not always parallel with symptomatic response. It appears in most instances that a degree of cornification short of full estrone effect is present at the time of greatest subjective improvement. Full estrone effect usually results in a feeling of subjective uneasiness and restlessness. This may be the reason why some observers report that stilbesterol does not give some patients the feeling of well-being noted with natural estrogens since it is so easy to overdose with stilbesterol (figs. 4, 5).

Irregular bleeding occurred in several instances but only once was curettment necessary, and then it was only because of metrorrhagia. Reduction of dosage frequently resulted in slight bleeding within two or three days. In no case was bleeding severe.

SUMMARY

It appears that stilbesterol has an advantage over currently available estrogenic substances only in that it is considerably cheaper and that a steady nonfluctuating estrogenic balance can be maintained more conveniently by oral administration. It has at least two disadvantages; first, a relatively small percentage of patients do not tolerate the drug and, second, its high potency and low cost make it too easily available to patients not having specific indications.

Concerning its use it must be remembered that much harm can conceivably come to the ovaries and endocrine balance of preclimateric women by treating functional endocrine disturbances with stilbesterol. Patients having nervous symptoms not due to the menopause are often made worse by the administration of the drug. Patients well past the menopause and relatively free from symptoms will frequently have pituitary stimulation and a return of severe symptoms. Adolescent ovaries might be seriously inhibited by administration of such a high-potency estrogen. Novak has made this statement: "There is no place for estrogenic hormone therapy between the ages of puberty and the menopause except in very rare instances."

There is no diagnostic test by which one can predict which patients will be relieved of their symptoms by stilbesterol, and no yardstick for dosage other than subjective improvement, excepting the vaginal smears which are a help in some cases. Nausea, vomiting or diarrhea of a sufficient degree to preclude use of stilbesterol occurred in only 4 per cent of the cases.

It is felt that the incidence of gastrointestinal symptoms increases with higher dosages and that it is better in some instances to build up the estrogenic level with natural estrogens by injections and

maintain it with smaller doses of stilbesterol, thus avoiding gastrointestinal disturbances. Gastrointestinal symptoms which appear during the early stages of administration of the drug tend to decrease as the menopausal symptoms disappear. The dosage of stilbesterol need not be kept at a high level, and it should be reduced to the minimum to control symptoms as soon as possible. Relief, if it is to be accomplished, is usually obtained within a period of two weeks.

In conclusion, one can safely say stilbesterol is a definite contribution to therapeutics, harmless when used in rational doses and with proper indications.

I wish to express sincere thanks to Eli Lilly & Company for generous supplies of enseals of stilbesterol and to Drs. Blackford and Palmer and The Mason Clinic for much clinical material.

ZINC POISONING

T. E. P. Gocher, M.D.
San Francisco, Calif.

Zinc is a metal which in itself is reported as being nonpoisonous and nonhazardous. Some of the salts, though, will cause symptoms and especially zinc oxide and zinc chromate. These symptoms are easily treated and can be readily controlled. They do not cause the severe permanent disabilities that lead or antimony may produce. Some believe that the metals associated with zinc (and being impurities) such as lead, arsenic, antimony and cadmium, may be the cause of symptoms. Sulphur dioxide is also found at times. Zinc white or zinc oxide is used in paints and is dusty in handling in the powder form. Zinc chromate is now used a lot in paints and will cause symptoms at times.

Zinc smelter workers suffer more or less from chronic bronchitis and moderate dyspnea. Zinc fumes cause digestive disorders; they irritate the stomach; they may cause gastralgia or pain in the stomach; they may cause nausea and vomiting; after a time a secondary anemia will develop.

Zinc may be absorbed by the mouth and stomach or inhaled from fumes. The action from fumes is more stimulating and will cause a more rapid rise of stippled red cells and symptoms more readily appear.

Zinc melts at 417.5° C., boils at 730° C. and volatizes as low as 500° C.

Working with zinc, some employees may develop "founder's ague." Symptoms of this are that these attacks usually occur two to three hours after work. There is an irritation and constriction of the throat, chilly sensations, shakes, muscular pains and vomiting, palpitation and there may be a fever up to 100° or 102°. The attacks last from five to twenty-four hours. There is a leukocytosis and increased polymorphs. It has been found that zinc chromate, such as used in paints, may cause "zinc chills." The cutting and welding of galvanized iron will also cause this condition. There may be pain, cramps and spasticity of the muscles of the hand.

Zinc sulphate and chloride may cause a dermatitis and conjunctivitis. Respiratory infections are common. Boils and eczema may be caused by contact or dust acting on the skin and especially in perspiring areas where zinc is present. Later, after long exposure of ten or twelve years, there may be nervous disease symptoms. Laryngeal and bronchial catarrh may develop.

The fumes of zinc oxide cause a marked outpouring of polymorphonuclears. Several cases of zinc chills were seen from using paint which had zinc chromate in it. In several of these cases, the zinc amount in the twenty-four hour specimen of the urine was estimated and found to be high above normal. These cases were readily cured and had no recurrences or permanent disability.

Twenty men were examined and blood studies made, who were exposed to fumes and dust of a substance containing 99.9 per cent pure zinc. It is interesting to know that typical blood picture was found, but in all cases after the fifth month it changed to that corresponding to a chronic lead blood picture. Only one of these twenty men had zinc chills, and he got well in twenty hours.

It was found that, when an attack of "chills" occurred, the blood reverted back to the zinc picture and then, as they got well, it again returned to a chronic lead picture. The following table will show the differential white blood count and stippled cells per 2000 red cells found in these twenty men. The counts given are the average for the men.

Blood	*Polys.*	*L. Lymphs*	*S. Lymphs*	*Eosins*	*Basos*	*L. Monos*	*Red Cells*	*Stippled Cells in 2000 Reds*
On hiring......	60	10	25	1	1	3	N.	0
End 1st mo.	26	60	8	4	2	4	N.1/s	1.0
End 2nd mo.	48	32	10	4	2	4	L/s	1.5
End 3rd mo.	46	28	8	4	2	4	L/s	1.0
End 4th mo.	52	8	32	4	2	4	L/s	0.5
End 5th mo.	50	16	24	3	2	6	N.	0

It was found, when the count of a case showed corresponding proportion in the first, second and third months of the zinc exposure cases, that with the correction of personal and plant hygiene, in all cases the blood returned to the normal picture for the exposure within a month. It was found that stippled cells soon show up in zinc poisoning and absorption. They were found in the first week when the men were exposed to zinc fumes and went as high as 12 per 2000 reds. They all disappeared within a month on correction of hygiene, plant and men especially. If a man had several attacks of zinc chills he was recommended to be transferred from that work, as he showed evidence of becoming susceptible to the zinc. None of the cases had any permanent disability ratings.

Zinc salts are now used in paint where lead formerly was used. In cases of absorption of zinc seen, the zinc chromate was the predominating salt. Six welders were seen, who in welding had used rods containing zinc or galvanized metals. These cases had typical zinc chills. Some of the welders told me that they had as many as five or six chills and the moment they started welding any substance that contained zinc, they would expect these chills. They soon got over them. Apparently the men were suspectible and allergic to zinc.

In cutting and welding galvanized iron, there is often a zinc exposure to fumes and zinc oxide. In a number of these cases the symptoms were: (1) sick at the stomach, (2) may vomit, (3) nausea, (4) anorexia, (5) headaches. They have at times dizziness and cramps. There were a number of cases of zinc chills. They have chills, fever, gas, increased pulse rate, and they feel "very sick." They usually have a dry throat and a cough at first, this becoming more inflamed, and have difficulty in talking at the end of the first stage. The voice is often husky for several days. It was found in all cases that they got practically normal and returned to work in twenty to forty-eight hours, and no permanent disability resulted.

The main complaints found from zinc exposure were: (1) dermatitis, chiefly in upper thighs and the trunk, (2) chills which make the employee very sick, (3) gastrointestinal upsets, (4) chronic anemia developing usually after about six months of exposure in those susceptible to zinc. It was found that abdominal "flu" may cause marked increase in stippled red cells, but they return to normal as soon as the disease is cured. No attacks of abdominal cramps were seen outside of chills. After working in zinc exposure, such as with paints containing zinc, anemia would often develop in six months or slightly longer and would affect chiefly the red cells and hemoglobin.

The typical average blood differential found in an average of twenty-six zinc exposures were: hemoglobin, 85 per cent; white cells, 8000; polys, 48 per cent; large lymphs, 32 per cent; small lymphs, 10 per cent; eosins, 4 per cent; basos, 0 per cent; large monos, 4 per cent; red cells normal and stippled cells about 1 per 2000 red cells.

The dermatitis seen was usually a red, papular type that itched severely. It occurred chiefly from contact and often from the dust in areas that perspire. It often did not require treatment and disappeared automatically in two or three months with no recurrence. This reacted very readily to treatment. The rash was often associated with inflammation of the hair folicles.

In all cases studied full cure was obtained, more readily obtained after exposure was removed. The best prophylaxis for zinc absorption is good personal hygiene, correct respirators and good plant hygiene. No permanent disabilities were found, but it was noted that there are a certain number of men who show a distinct susceptibility and allergy to zinc salts.

CLINICAL FORUM

OBSTETRIC PROBLEM

Patient, white, female, age 33, gravida —I, para —0. She presented herself on Oct. 2, 1941. Last menstrual period Aug. 1.

Past history. This patient has been studied for kidney pathology at the Universities of Minnesota and Michigan, and at Mayo's at various intervals over the past twelve years. She has received various diagnoses of nephritis, nephrosis and chronic interstitial nephritis. There is a history of chronic low grade elevation of blood pressure, occasional edema of the lower extremities extending to the knees, and mild albuminuria. She has been advised against pregnancy by one institution, was informed by another that pregnancy might not have any serious effect on her kidney situation, and was definitely advised to go ahead with pregnancy by the third. As far as the rest of her past history is concerned, there is nothing pertinent.

Physical examination reveals a tall, gynecoid blonde in good nutrition. General physical examination reveals edema of the lower extremities, extending to the midcalf area. Lungs are clear, heart is negative, abdomen negative.

Pelvic examination. No pathology. There are the typical signs of early pregnancy. Pelvis is a large android type.

Laboratory findings. Blood pressure 146/100; hemoglobin 92 per cent; r.b.c. 4.4; Wassermann negative; B.M.R. —2; pulse 80; voided urine specimen sp. gr. 1.005, no sugar, pus, or r.b.c.; albumin approximately 2+ or 0.1 per cent Esbach. Fasting blood sugar 111.1, cholesterol 181.5 mg. Urine concentration test (Newburgh-Lashmet), maximum concentrating ability 1.022 corrected. Albumin estimated 4+ or 0.4 per cent Esbach. A second concentration test was carried out two weeks later. The maximum concentrating ability of this specimen corrected is 1.020.

What would you do? It should be stated that the patient's economic situation is good and she is able to carry out any reasonable regime, even to absolute bed rest. She

(*Continued on Page* 471)

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING, 1942

ORGANIZATION ACTIVITIES

The Council of Oregon State Medical Society met in Corvallis November 8 at the home of Dr. Henry Garnjobst, Councillor for the Third District. A number of members of the Benton County Medical Society also attended.

The main item of business was discussion and approval of the incorporation of an Oregon Physicians Service Bureau. This Bureau is a central organization under control of the State Medical Society, and will offer medical and hospital and related services in districts not now serviced through the Bureau of Medical Economics. This fills a long-felt need for large districts, where the physicians are too far apart to organize and operate properly their own bureau. Nor does it supersede the existing service bureaus. for it in no way interferes with their operations. It does create a central agency for writing state-wide contracts which can subsequently be turned over to local bureaus for contract fulfillment.

Under this plan contracts can be made with such agencies as the Farm Security Administration on a uniform state-wide basis. As a matter of fact, just such a project is being proposed with the F.S.A. in which there will be definite limitations, and initial rates will be subject to future changes as experience determines. Other federal and state agencies may be able to find a solution for their medical service problems in such an organization.

The Council also approved the establishment of an Executive Committee for the Bureau of Medical Economics, and elected W. W. Baum, Salem; E. E. Gambee, Portland; Henry Garnjobst, Corvallis; G. I. Hurley, Eugene; C. W. McCain, Hood River; E. H. McLean, Oregon City; and D. R. Ross, Eugene, to this committee.

Multnomah County Medical Society decided to gather some experience on family coverage in a higher income bracket by granting approval to the Multnomah Medical Service Bureau of its proposed contract with the Postal Employes and their spouses (not including their children).

U. OF O. POSTGRADUATE SESSION

Second postgraduate session in University of Oregon Medical School's 1941 winter series will be held on the Portland campus December 29-31. The course in pediatrics is planned for physicians of Oregon and Washington, conducted by the Department of Pediatrics of University of Oregon Medical School in cooperation with the Divisions of Maternal and Child Health of Oregon and Washington State Boards of Health.

Joseph B. Bilderback, Professor and Head of the Department of Pediatrics at University of Oregon Medical School, is chairman of the session. He is assisted by Paul V. Woolley, assistant professor and assistant medical director of Doernbecher Hospital; L. Howard Smith, chairman of the child welfare committee of the Oregon State Medical society; H. H. Skinner, Chairman of the state medical association, maternal and child welfare committee for Washington; H. L. Moon, Chairman of the pediatrics session of the medical advisory committee for Washington; Percy F. Guy, Chief of the Division of maternal and child hygiene of the Washington department of health; H. M. Erickson, director of the division of maternal and child health of the Oregon State Board of Health, and Ralph Couch, Administrator of Hospitals at the University of Oregon Medical School.

The divisions of maternal and child welfare of the two state boards of health are sponsoring some of the physicians who will be in attendance, but in addition to this group University of Oregon Medical School is directly registering other doctors.

This course is to be handled by means of informal symposia whenever possible. The brevity of available time and scope of the subject suggest that such a presentation should be highly effective in allowing unlimited questioning from the floor and flexibility in context to suit the desires of the enrollees.

The tentative faculty includes: Joseph B. Bilderback, Morris L. Bridgeman, James W. Rosenfeld, Paul V. Woolley, Scott Goodnight, Adolph Weinzirl, John A. Gius, Charles E. Gurney.

TENTATIVE PROGRAM

Monday, December 29

A.M.

9:00-12:00 Seminar on newly born baby and early infancy.
  1. Immediate problem of care of baby. Prematurity. Examination.
  2. Feeding and feeding problems.
  3. Pyloric stenosis and similar disorders.
  4. Jaundice, hemorrhagic disease and anemia.

P.M.

2:00-3:30 Surgical problems of childhood. The acute abdomen. Minor surgical conditions.

3:30-5:00 Demonstration of pediatric technics. Venapuncture, parenteral fluids, transfusions.

Tuesday, December 30

9:00-12:00 Seminar on problems of infancy.
  1. Feeding and vitamin therapy.
  2. General therapeutic measures.
  3. Growth and development during infancy.
  4. Immunization and other prophylactic measures.

P.M.

2:00-3:30 Symposium on communicable diseases. Illustrated by movies.

3:30-5:00 Demonstration of pediatric technics: lumbar puncture, encephalography, administration of biologics.

Wednesday, December 31

A.M.

9:00-12:00 Symposium on problems of childhood.

1. Diets and food habits.
2. General methods of therapy. Chemotherapy.
3. Growth and physical development.
4. Physical and laboratory diagnostic methods. Illustrated with available material.

BOARD OF MEDICAL EXAMINERS

A special meeting of the Board of Medical Examiners was held December 9-10 at the Board offices for the purpose of a further hearing in revocation proceedings commenced at the regular October meeting. The Board also considered reciprocity applications and other items of business brought before them.

The attention of members of the profession in active practice is called to the fact that registration fees for the year 1942 will be delinquent after December 1.

The Board will meet again on January 21-23, 1942, to conduct the semiannual State Board Examination which will be held at the University of Oregon Medical School Library from 9 a. m. until 4:30 p. m. of each day.

STATE BOARD OF HEALTH

Mosquito Control Program. The State Board of Health was notified on November 5 of the approval by the Works Progress Administration of a Mosquito Control Program. This agency will spend $131,200 for eradication of both pest and disease-carrying mosquitos in areas adjacent to defense industries and military and naval establishments.

State Laboratory Meeting. The Oregon State Laboratory workers will hold their annual meeting at 720 Oregon Building, Portland, December 22-23. Among the speakers will be Robert Benson, Lyle Kingery, Charles Manlove, Ira Manville, Harry Sears, Major Helfrich of Barnes Hospital, Vancouver; J. N. Shaw, Head, Department of Veterinary Medicine, Oregon State College; and Mr. Curtiss M. Everetts, Jr., State Sanitary Engineer.

New City Clinic. The University of Oregon Medical School and the Portland City Health Bureau opened a venereal disease clinic at 3rd and Oak Streets, November 18. This clinic is being run by the existing staff of the two departments and fills the long felt need for a centrally located treatment and prophylactic facility.

Industrial Hygenist Visits State. Thomas Storey, retired Professor of Public Health at Stanford, now employed by the American Social Hygienic Association, spent several days in Portland studying the national defense industries with regard to the venereal disease control methods.

Health Officer to Army. J. Edward Dehne, Coos County Health Officer, was recently ordered to active duty with the Army.

U. OF O. MEDICAL SCHOOL

The second postgraduate session of diseases of the chest was held on the University of Oregon medical school campus December 11-13, and was given by the school in cooperation with the Pacific Northwest section of the American College of Chest Physicians. Ralph C. Matson, chief surgeon at the University State Tuberculosis Hospital, was chairman of the session program.

Pacific Northwest leaders in the field made up the faculty with Leo Eloesser, professor of surgery at Stanford University School of Medicine, as "outside" guest speaker. Approximately fifty doctors from Northwest states participated. David W. E. Baird, associate dean, gave the welcome address in behalf of Dean Richard B. Dillehunt, still recuperating from his summer illness.

Dr. Eleosser gave two papers. He spoke at the evening session, December 11, on "Causes of Pulmonary Cavitation." Thomas M. Joyce of Portland presided. He was also the speaker at the December 12 banquet, at which Dr. Matson presided. His topic was "Treatment of Pulmonary Cavities by Various Methods of Closed Drainage."

Panel discussions, one bearing the title "Information, Please," featured luncheon meetings. Sessions were held in the medical school auditorium and in the University Tuberculosis Hospital.

Adolph Weinzirl, former Portland city health officer who this term became head of the department of public health and preventive medicine at the school, has recently made a cross-country trip, studying educational institutions with regard to public health and social hygiene education. The major part of the trip was financed by the Rockefeller Foundation.

Advanced students in nursing education include women from sixteen states, the largest number of states ever represented in advanced nursing eduction. One student is enrolled from Manila, P. I.

Doernbecher Children's Hospital guild recently provided a $500 fund for intravenous therapy. One of the chief uses to which the fund will be put is acquisition of blood plasma.

Five $200 scholarship awards, made under the Kenneth A. J. Mackenzie scholarship fund, have been announced by Dean Dillehunt and University of Oregon President Donald M. Erb. They are James A. King, Marion Wietz, Clarence G. Peterson, Gordon McGowan and Arthur W. Berg. The fund was provided in the will of Mildred Anna Williams, wealthy Manhattan widow.

SOCIETY MEETINGS

CLACKAMAS COUNTY MEDICAL SOCIETY

The first fall meeting of Clackamas County Medical Society was held October 31 at the Chamber of Commerce in Oregon City. Verden E. Hockett, Lt. Commander, MC., USNR., addressed the Society on the various phases of the Selective Service examination. Following this C. O. Sturdevant of Portland spoke on the psychiatric side of the examination.

JACKSON COUNTY MEDICAL SOCIETY

At a meeting in Ashland on October 22, James Hayes of Medford spoke on "Injuries to the Knee Joint." On November 12 another meeting was held in Medford and the society was addressed by W. P. Holt of Medford. The title of this address was "Pylorospasm."

LAKE COUNTY MEDICAL SOCIETY

Members of Lake County Medical Society entertained the officers of Oregon State Medical Society at Lakeview on October 23. W. W. Baum, state president from Salem, spoke on "Policies and Activities of the Oregon State Medical Society." L. S. Kent, councilor at large from Eugene, addressed the group on "The Program of Postgraduate Education of the Oregon State Medical Society."

MARION-POLK MEDICAL SOCIETY

The regular meeting of the Marion-Polk Medical Society was held in Salem on November 18. Joe B. Davis of Portland gave a discussion on "Disorders of the Foot," stressing various types of flat feet and anomalies that may cause painful feet. He also discussed appliances and surgery of the feet.

MID-COLUMBIA MEDICAL SOCIETY

A joint meeting of officers of Oregon State Medical Society and Mid-Columbia Medical Society was held November 17 at Hood River. Thomas E. Griffith, president of the Mid-Columbia group, introduced W. W. Baum of Salem, president of the state group, who discussed the policies and activities of his organization. Roger H. Keane of Portland, member of the committee on annual session, discussed the postgraduate educational opportunities which are available to Oregon physicians.

MULTNOMAH COUNTY MEDICAL SOCIETY

At its regular meeting November 5 Robert Dow gave a short historical sketch of the life of "Thomas Willis." Problems of the State Industrial Accident Commission were discussed by Mr. Ralph E. Jackson, claim agent for the Commission, and by Drs. John Trommald and Harold Blosser.

UMATILLA COUNTY MEDICAL SOCIETY

A panel discussion of sulfonamide compounds conducted by Norman David, professor of pharmacology at the University of Oregon Medical School and J. P. Brennan of Pendleton featured the regular meeting of the Umatilla County Medical Society which was held in Pendleton on November 12.

MEDICAL NOTES

Administrators of the medical service bureaus, affiliated with the Bureau of Medical Economics of Oregon State Medical Society, held their quarterly business meeting in Klamath Falls November 15. W. W. Baum, president of Oregon State Medical Society, and A. E. Larsen, medical director of the California Physicians Service, were guest speakers.

Hospital at Troutdale. H. C. Tomlinson is remodeling a large residence in Troutdale into a modern small hospital.

Marvin Nerseth has opened offices in Klamath Falls, having recently moved from Chiloquin where he practiced for seven years.

J. L. Cook is reopening his offices in Rainier after a year's absence in the East.

New Health Officer for Benton County is announced. W. F. Johnson, who has held this position for many years, as well as that of Corvallis City Health Officer, is retiring and Harry J. Anderson will be the new Health Officer.

Modernization of the Vidito Hospital at Tillamook has been completed.

Alice Pendleton has opened offices in Astoria. Dr. Pendleton graduated from the University of Oklahoma and has practiced in Decatur, Illinois, since 1938.

The American College of Surgeons recently gave its approval to the four cancer clinics that are operating in Portland. These clinics are held at Good Samaritan Hospital, University of Oregon Medical School, Multnomah Hospital and Veterans' Administration Hospital.

CLINICAL FORUM

(*Continued from Page* 468)

is extremely desirous of continuing her pregnancy. If she should abort spontaneously and later state her determination to attempt another pregnancy, what advice would you give and suggest for her care?

Here is a problem unlike others presented heretofore, in that it has not gone on to a closed case. There are suggestions that as it proceeds the obstetrician is going to be faced with conditions that will demand clear-cut decisions with positive actions. It is desired that men of experience and those who have encountered such a situation shall comment freely on their care of this case and thus render a service.

COMMENTS ON PEDIATRIC PROBLEMS IN NOVEMBER ISSUE

First commentator sugests leukemia as a diagnosis, the outcome of which is exitus fatalis. Relative to the statement that puncture wounds would bleed for many hours, one wonders if the child were given vitamin K. This vitamin is so new that there is a forlorn hope; thus, feeling that its administration might change the clotting picture although under the circumstances, it could hardly be anticipated. It is interesting to note the cheering response in platelet count, but the repeated transfusions apparently did not stem the inexorable advance of the immature lymphocyte, indicating the inevitable. A persistent rise in temperature weakly suggests the possibility that the entire process is induced by an infection. The sulfonamides have been tried on almost everything. In view of the fact that these drugs have effects on blood cells, it would appear reasonable to use them here with open mind. The commentator hopes the pediatrician presenting this problem will further discuss the case relative to use of the two remedies mentioned above. Leukemia, being chiefly a disease of childhood and adolescence, suddenly crushes all the hopes of parents who are fondly and expectantly observing their child's development. The position of the pediatrician in the family challenges his stamina. It is not an instance of therapeutics, but rather of comfort, the measure of which is dependent upon his integrity of character and sincerity of personality.

A second commentator states that from the history one gets the picture of a gradually developing illness over a period of several weeks, then going into a period of slight improvement for a few weeks but never returning to normal. The important things in the physical examination are the continuous low-grade fever, pale lemon appearance of the skin, evidence of purpura and enlarged liver.

The laboratory examination is the key to the diagnosis in this case and presents a typical picture of lymphatic leukemia which is the more common type occurring in children of this age. To establish the diagnosis conclusively a bone marrow puncture would be of value. Treatment is always very unsatisfactory and prognosis is always very gloomy. There have, however, been one or two reports of recovery following the use intravenously of large amounts of ascorbic acid (500 mg. daily) and this usually has some symptomatic value in lessening the amount of purpuric manifestations that these children have.

A third commentator believes this is a case of subacute leukemia. This is based on the fact that there is evidence of either deep seated infection or of a malignancy shown by purplish spots on the neck and the other evidence of

(*Continued on Page* 475)

THE OFFICERS OF WASHINGTON STATE MEDICAL ASSOCIATION EXTEND TO THE PHYSICIANS AND THEIR FAMILIES IN THE STATE THE SEASON'S GREETINGS. A MERRY CHRISTMAS TO ALL AND, LET US HOPE, A 1942 WHICH MAY BRING PEACE AND TRANQUILITY TO THE WORLD.

—GEORGE W. CORNETT, *President*

MINIMUM WAGE FOR WOMEN

In a Bulletin recently issued by the Washington State Medical Association attention is called to a new regulation issued by the Industrial Welfare Committee of the Department of Labor and Industries of the state, known as Minimum Wage Order No. 37. Under authority vested in the Industrial Welfare Committee through Chapter 174 of the Session Laws of the State of Washington for 1913 and as a result of a conference between employers and employees, the new regulations call for a raise in wages for all office employees, defines their status and hours. Physicians who employ office help are cautioned to read the order, which goes into effect January 1, 1942.

TO WHOM IT MAY CONCERN, TAKE NOTICE:

That pursuant to the authority in it vested by Chapter 174 of the Session Laws of the State of Washington for 1913, and pursuant to the recommendations of the conference of representatives of employers and employees in the occupation of "office workers," as hereinafter defined, throughout the State, together with representatives of the general public, duly held after investigation of such industry, which said recommendations were duly considered by said Industrial Welfare committee,

The Industrial Welfare committee for the State of Washington does hereby order that:

Definition

1. The term "office workers" used herein shall apply to the following types of employment of women over eighteen (18) years of age:

Stenographers, bookkeepers, typists, billing clerks, filing clerks, cashiers, checkers, invoicers, comptometer operators, auditors, library attendants, P.V.X. operators, receptionists, office telephone operators, and all types of clerical work.

Hours

2. No person shall employ any woman in the occupation of office worker for more than six (6) days in one calendar week of forty-eight (48) hours, nor for more than eight (8) hours in any one day; no person shall employ any woman as an office worker for more than five (5) consecutive hours without a rest period of at least three-quarters of an hour.

Wages

3. No person shall employ an experienced woman in the occupation of office worker at a wage of less than thirty-seven and one-half cents (37½c) per hour, or eighteen dollars ($18.00) for a work week of forty-eight (48) hours.

Inexperienced Office Workers

4. An inexperienced office worker is a woman who has had less than six (6) months employment in the same or similar type of employment in which she is employed.

Wages for Inexperienced Office Workers

5. If an employer desires to hire an inexperienced office worker at a rate less than that established for experienced office workers, he shall make application to the supervisor of Women in Industry for a permit for such employment, which shall be at the following rates and in relation to the previous experience of such person:

6. First period, not to exceed thirteen (13) weeks, at the rate of twenty-seven and one-half cents (27½c) per hour, or thirteen dollars and twenty cents ($13.20) for a work week of forty-eight (48) hours, for a totally inexperienced office worker.

7. Second period, not to exceed thirteen (13) weeks, at the rate of thirty-two and one-half cents (32½c) per hour, of fifteen dollars and sixty cents ($15.60) for a work week of forty-eight (48) hours, for a partly experienced office worker; after which time the minimum wage of thirty-seven and one-half cents (37½c) per hour must apply.

Employers Records

8. The employer shall keep an accurate record of the daily and weekly hours and wages paid each woman employed.

9. All persons who perform services within the occupations enumerated in paragraph 1, above, or of any similar kind, shall be deemed employees unless and until the Industrial Welfare committee has ruled upon adequate proof that the order does not apply to them.

10. Any person employing a woman for whom a minimum wage or standard condition of labor has been specified, at less than said minimum wage, or under conditions of labor prohibited by the order of the committee; or violating any other of the provisions of this act, shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be punishable by a fine of not less than twenty-five dollars ($25.00) nor more than one hundred dollars ($100.00).

If any employee shall receive less than the legal minimum wage, except as hereinbefore provided, said employee shall be entitled to recover in a civil action the full amount of the legal minimum wage, as herein provided for, together with costs and attorney's fees to be fixed by the court, notwithstanding any agreement to work for such lesser wage. In such action, however, the employer shall be credited with any wages which have been paid upon account. Laws of 1913, Chapter 174, Section 15, Section 17 of the Session Laws of the State of Washington.

This order shall become effective sixty (60) days from the date hereof, or January 1, 1942.

INDUSTRIAL WELFARE COMMITTEE
FOR THE STATE OF WASHINGTON

NOTICE: Your attention is respectfully called to Section 11, Chapter 174, of the Laws of 1913, which provide that each employer shall be required to post a copy of this order in each room in which women affected by the order are employed, and failure to do so constitutes a misdemeanor.

MEDICAL NOTES

OMAK HOSPITAL REMODELED. The hospital at Omak has been remodeled with addition to bed capacity with other improvements. The work has been done as a memorial to the late Mr. J. C. Biles, founder of the Biles-Coleman Lumber Company. The hospital henceforth will be known as the J. C. Biles Memorial Hospital.

SEATTLE HOSPITALS PETITION FEDERAL GOVERNMENT. Because of approximately 90 per cent occupancy of major Seattle hospitals and practically no facilities for taking care of large emergency demands, three Seattle hospitals have made applications to the Government for funds to build additions. They agree to pay approximately one-third of the cost of the improvements. This measure is approved by the Washington State Defense Council, as well as the Seattle Hospital Council.

TUBERCULOSIS HOSPITAL IMPROVED. King County Commissioners have approved utilization of county employees to make repairs on the Morningside Tuberculosis Hospital at Georgetown, Seattle. No contract will be let for this work.

BREMERTON GETS FEDERAL GRANT. Grant of $476,000 has been made by the Federal Government as a defense project for construction of a new hospital at Bremerton. This hospital will have approximately 160 beds. A survey showed that the city needed 200 beds but the Olympic Hospital has undertaken construction of a 42 bed addition which leaves need for 160 further beds in the city.

NAVY HOSPITAL ADDITION. A new wing is to be added to the United States Navy Hospital at Bremerton. This will be two stories with basement, measuring ninety-eight by fifty-two feet. Cost is approximately $151,000.

AUBURN HOSPITAL IMPROVED. A ramp and a sun porch have been added to the Suburban Hospital at Auburn at a cost of about $1,500.

OFFICIAL POSITIONS. William N. Keller has been reappointed superintendent of Western State Hospital at Fort Steilacoom. Dr. Keller was first appointed superintendent of the hospital by the late Gov. Ernest Lister and served from 1914 to 1922. He was reappointed by Gov. Clarence D. Martin in 1933 and has been in the position ever since. Charles E. Taylor formerly superintendent of Western State Hospital at Steilacoom, has been named head physician at the Eastern State Hospital at Medical Lake. He has been in federal service for several years. Cowlitz County board of commissioners have announced the appointment of Thomas H. Biggs of Longview as county health commissioner. He will have the position formerly held by A. L. Ringle. Sam R. Page of Walla Walla, previously county physician, has resigned to enter private practice. Wallace Pratt will take over medical and surgical duties of the office of county physician.

MOSQUITOS CARRY ENCEPHALITIS. Reports published from the Hooper Foundation, San Francisco, show that the studies carried on in Yakima last summer indicated that mosquitos may carry the virus of encephalitis.

LOCATIONS. Rosser P. Atkinson of Hood River has opened an office for practice in Goldendale. Ralph S. Keyes has moved to Walla Walla, where he will be associated with C. E. Montgomery.

Clem Champioux and Victor Johnson have returned to Yakima to resume practice after several months in the army.

Carl Walters, who has been on the staff of Yakima County Hospital for the past two years, has now entered private practice in Yakima.

WEDDING. John A. Nelson and Miss Maxine Disher of Longview were married October 8.

OBITUARIES

DR. CHALMER MIDDLETON HARGER of Seattle died suddenly November 13 of coronary thrombosis, aged 51. He received his medical degree from University of Colorado School of Medicine at Denver, graduating in 1921. He had practiced in Seattle since 1924.

DR. JAMES MICHAUX CORPENING of Harrington died of coronary thrombosis November 1. He was 74 years of age. He was born at Perkinsville, North Carolina, in 1867 and received his medical degree from University of Nashville Medical Department, graduating in 1898. He was licensed in Washington in 1900. He first practiced for a time in Walla Walla and moved to Harrington thirty-nine years ago, where he practiced constantly until shortly before his death.

DR. EDWARD P. CONDON of Spokane died October 23 after an illness of several months. He received his medical degree from Creighton University School of Medicine at Omaha, Nebraska, graduating in 1910. One year later he came to Washington and had practiced in Spokane for thirty years.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

Cowlitz County Medical Society held its regular November meeting at Monticello Hotel, Longview, November 19.

Guest speakers were Gunnar Nelson, Associate Professor of Obstetrics and Gynecology at University of Oregon Medical School in Portland, who spoke on "Postpartum Care," and Samuel G. Henricke, pediatrician from the staff of the Portland Sanitarium, who discussed "Modern Nursery Technic." His talk was illustrated with moving pictures and a scale model of the nursery installed at Portland Sanitarium.

A representative of Washington State Medical Association was present and spoke on some of the problems confronting the medical association.

KING COUNTY MEDICAL SOCIETY

King County Medical Society held a meeting in the auditorium of the Medical-Dental Building, Seattle, November 3, president Weichbrodt presiding. C. G. Day, E. M. Grady and L. J. Rosellini were elected to membership. Applications were received from L. D. Fey and R. A. Tidwell.

The program consisted of a symposium on anesthesia. Dorthie N. Hopper read a paper on "Inhalation Anesthesia" which discussed nitrous oxide, ethylene, cyclopropane, ether, ethyl-chloride, chloroform and vinethene. W. A. Millington discussed "Observations Derived from Supervision of 4500 Spinal Anesthetics." All features concerning this form of anesthesia were considered. C. E. MacMahon presented "Local Anesthesia," discussed from the standpoint of the general surgeon. Quentin L. Wood presented a paper on "Intravenous Anesthesia." He described its uses, contraindications and technic.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of Pierce County Medical Society was held in the Medical Arts Building, Tacoma, on November 11, T. K. Bowles, president, presiding. Minutes of the previous meeting were read and approved.

Charles D. Kimball, of Seattle, presented a well-arranged and interesting paper on "Stilbesterol in Management of the Menopause." Discussion was by Drs. Reynolds, Herrmann, Hosie, McBride and Willard.

M. R. Hosie presented a complete and intelligent discussion of "Occiput Posterior Position." The paper was discussed by D. H. Johnson.

A letter was read from the State Medical Association, regarding the need of a physician in Goldendale.

WALLA WALLA VALLEY MEDICAL SOCIETY

Walla Walla Valley Medical Society met at the Marcus Whitman Hotel, Walla Walla, November 13. George W. Cornett, president of the State Association, reviewed the history of organized medicine, while Attorney William T. Laube, of Seattle, Counsel for Washington State Medical Association, advised us on medicolegal problems that confront the profession. Arthur Anderson, Executive Secretary of the State Association, discussed problems of 1942.

WHITMAN COUNTY MEDICAL SOCIETY

Regular meeting of the Whitman County Medical Society was held at Colfax, October 2. Robert T. Henry of Colfax was reelected president, Paul G. Weisman was elected vice-president, J. L. Gilleland of Pullman, secretary-treasurer.

YAKIMA COUNTY MEDICAL SOCIETY

The October meeting of Yakima County Medical Society, held on Monday, October 27, was turned over to the two guest speakers from Portland: Oliver Nisbet, who discussed "Minor Surgical Procedures," and John Gius, who discussed "Recent Advancements in the Treatment of Intestinal Obstruction."

On November 17 the society and the Staff of St. Elizabeth's Hospital held a joint dinner meeting at the hospital. Howard P. Lewis of Portland was the speaker of the evening. His subject was "Rheumatic Fever and Recent Advancements in Its Therapy." It was followed by questions and discussion.

WOMAN'S AUXILIARY

Yakima County Auxiliary held its annual membership tea on October 8 this year at the home of Mrs. Guy Marcy which not only welcomed the new members of the Auxiliary but also had as guest of honor Mrs. James H. Berge of Seattle, new State Auxiliary president. Mrs. Irvin Weichbrodt also of Seattle, who is State circulation chairman of the Bulletin, accompanied Mrs. Berge and spoke on the value of *The Bulletin.*

Whatcom County Auxiliary in Bellingham had a well attended November meeting with twenty-five present. Mrs. E. W. Stimpton, who has recently returned from a trip through Central and South America, was the guest speaker.

Spokane County Auxiliary held a meeting in November at which Mrs. James E. Cunningham, president, was hostess to the group, entertaining at a tea. The program dealt with nutritional defense.

Kitsap County Auxiliary has very attractive program books for each member for each meeting. The November meeting was well attended by forty-one present, and was held at the home of Mrs. T. C. Baldwin. Dr. Russell Wilson of the Kitsap County Health Department, Dr. Evans and Dr. Dewey of the State Health Department were the speakers.

Clark County Auxiliary met on November 4 at the home of Mrs. W. S. Shepard in Camas. It was decided to continue the work undertaken in *Hygeia* and the Red Cross and to hold a Public Relations meeting.

Pierce County Auxiliary met for luncheon at the Y. W. C. A. at the November meeting and had as guest speaker Mayor Harry P. Cain of Tacoma. He told of the health problems arising from the proximity of the army post and how the City Health Department was combating and controlling the spread of venereal diseases.

Mrs. George J. Vandenberg,
State Publicity Chairman.

MEDICAL NOTES

Payette Group Discusses Hospital. A meeting at Payette, October 27, discussed the possibility of development of a hospital for the city. C. E. Carver of Emmett described the development and expansion of the Emmett Hospital from its inception just a few years ago to its present status as a large modern hospital.

Official Positions. Harry L. Randolph, physician for Canyon county, has resigned to go into private practice at Calipatria, Calif. No one has been named to succeed him. W. C. Nolte of Nampa has been appointed deputy county physician by the county commissioners.

Hospital Construction Started. Construction of a new $10,000 hospital is under way at Cascade. The building will house eight beds, nurses' quarters, offices and living quarters for a physician. It is constructed so that additions may be made from time to time.

Hospital Association Meets. Annual meeting of Idaho State Hospital Association was held at St. Joseph's Hospital, Lewiston, October 11. Election of officers resulted in selection of Mr. J. H. Trainer of the Latter Day Saints Hospital at Idaho Falls, as president; Mr. Albert Weston of Pocatello, first vice-president, and Mother Bernard of St. Josephs Hospital, Lewiston, second vice-president; Mr. F. W. Anderson, of the Nampa Clinic, secretary, and Mr. C. Williams of Samaritan Hospital, Nampa, treasurer.

Locations. L. G. Balding has arrived from Mahattan, Kansas, to establish a practice in ophthalmology in Boise, specializing in eye, ear, nose and throat. A. J. White of Genessee has been relieved from active service in the army. H. B. Daines, formerly of Preston, has recently located in Boise.

Local Health Service. With the establishment about August 15 of the City-County Health Unit at Boise, there are now in service in Idaho five local health units: (1) South Central District Health Unit, Twin Falls; (2) North Central District Health Unit, Lewiston; (3) Bannock County Health Unit, Pocatello; (4) Kootenai County Health Unit, Coeur d'Alene; (5) City-County Health Unit, Boise.

W. C. Dreessen, Past Assistant Surgeon, with the Division of Industrial Hygiene, National Institute of Health, United States Public Health Service, Washington, D. C., was in Idaho during October talking before District and County organizations of Idaho State Medical Association on matters of Industrial Health of interest to Idaho physicians. During his stay he consulted with members of the Silicosis Panel, and members of the following committees of the State Association: (1) Industrial Medicine Committee, (2) Insurance Board Committee.

Idaho Public Health Association held its second annual meeting at Lewiston, October 6-7. The program included papers on many phases of public health, sanitation and tuberculosis problems, presented by some twenty speakers.

CLINICAL FORUM

(*Continued from Page* 471)

ecchymosis in the skin. The differential blood count settles this point. The fact that there are only 20,000 white blood cells does not in any way rule out the leukemia. This is shown by the differential count and other blood findings. Prognosis is poor. Treatment should include conservative amount of deep roentgen therapy. Further study of this case would be interesting. Bone marrow findings and blood ascorbic acid level would be useful.

A fourth commentator thinks this case is acute lymphatic leukemia which is chiefly a disease of childhood and early adult life. Also there may be a consideration of Von Jaksch anemia due to infection occurring in infancy and early childhood with enlarged liver and spleen depending on duration of the infection. In this type of anemia there has been a tendency of recovery, while in acute lymphatic anemia it is almost always fatal.

As to the treatment there is no specific therapy, being mostly symptomatic. The most used therapy is blood transfusion which helps the anemia and lessens the tendency to hemorrhage. Repeated transfusions have to be given, when the anemia returns or the bleeding begins to be bad. Irradiation has been suggested, but not proved to be any good in acute leukemia. Liver, spleen, as well as leukocytic extracts have been employed, also arsenic and iron without any definite benefit. More than half the cases are fatal in about three months. A small percentage have lived between three and six months.

Outcome of Case: The child was readmitted to the hospital with severe anemia and further evidence of bleeding into the joints. A sternal puncture was done and a blood smear was sent to Dr. Osgood, whose report was "acute leukemic monocytic leukemia." The patient died three weeks after the second admission. Autopsy findings were negative save for enlarged lymph nodes in the mesentery and cervical regions. The microscopic report has not yet been made.

WAR RATIO OF MALE TO FEMALE BIRTHS

The normal proportion of male births over female births was even greater in every European belligerent power during the last years of World War I and for perhaps two or three years afterward, *The Journal of the American Medical Association* for November 22 says in answer to an inquiry.

"The proportion of male births increased also in many of the important European neutral countries," *The Journal* continues, "including Norway, Sweden, the Netherlands and (for the year 1920) Switzerland. There was an observable rise in Australia, but not in the United States or in New Zealand, among the non-European belligerents. The increase in the proportion of male births, where observed was of short duration."

As for the reasons for this increase, *The Journal* says that "A simple explanation that seems entirely adequate has not yet been offered."

BOOK REVIEWS

Cancer of the Face and Mouth. By Vilray P. Blair, M.D., Professor of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo., Sherwood Moore, M.D., Professor of Radiology, Washington University School of Medicine, St. Louis, Mo., Louis T. Byars, M.D., Washington University School of Medicine, St. Louis, Mo. With 260 ilustrations and 64 plates. 599 pp. $10. The C. V. Mosby Co., St. Louis, Mo., 1941.

This is an important volume inasmuch as it concerns a field in which so much can be done for the patient but so often very little is done, and that too late. Illustrations are profuse and adequate. The authors bring out the important point that many of the older surgical practices which were quite sound have on occasion been substituted for by questionable or "less than surgical" pseudosurgical practices. They state that there is considerable confusion in the minds of practitioners due to a tendency of distrust to established surgical procedures. The purpose of the book is in large measure to allay these. The value of radiation and the cold knife is given due credit but the value of the actual cautery is especially emphasized. The book deals at some length with treatment of far advanced cases, those of primary failures and others that are usually regarded as hopeless. The importance of doing neck dissections in the majority of cases of oral cancer is also repeatedly stressed. The book should be of great interest to all plastic surgeons as one-third of the space is devoted to well labeled diagrams of plastic surgery and operative technic.

H. V. Hartzell, M.D.

The Modern Treatment of Syphilis. By Joseph Earle Moore, M.D., Associate Professor of Medicine, The Johns Hopkins University, etc. With the collaboration of Jarold E. Kemp, M.D., Associate in Venereal Diseases, The Johns Hopkins Hospital, Harry Eagle, M.D., Passed Assistant Surgeon, United States Public Health Service, etc., Paul Padget, M.D., Associate in Medicine, The Johns Hopkins University, Mary Stewart Goodwin, M.D., Instructor in Pediatrics, The Johns Hopkins University. Second Edition. With 98 Figures and 122 Tables. 674 pp., $7.00. Charles C. Thomas, Springfield, Illinois and Baltimore, Maryland, 1941.

From an individual and public health point of view it has become vitally important for physicians in general to understand better the biology of syphilitic infection in relation to treatment. Can the treponemes infect without an abraded surface? How is the virus disseminated? How do you explain symptomless infection of syphilis, those mysterious, latent infections discovered often accidentally? Is there an immunity in syphilis? Is the infectious agent always visible and spirochetal? Is a serologically negative patient always noninfectious? No is the answer. What is a "cure" from the physician's standpoint and the patient's point of view? These are but a sampling of the questions discussed and answered.

Who should treat syphilis? "The urologist who looks no further than the chancre, the dermatologist whose knowledge of the infection is skin deep, the ophthalmologist whose physical examination is limited to a single organ is not the ideal syphilotherapist." "Successful syphilotherapy requires a basic knowledge of the biology, clinical course and pathology of syphilitic infection, which in itself implies a fairly wide acquaintance with general medicine." What should be done for the patient with a treponema-free genital lesion and negative serology? Antisyphilitic treatment should never be started unless there is positive proof by a positive serologic reaction or the treponemes demonstrated in the initial lesion.

Out of the wealth of study and material of the Syphilis Clinic of the Johns Hopkins Hospital the authors have given us the fruits of their experience. The book needs no recommendation. It is solely a question whether one is interested in or treats syphilis. With the national interest in stamping out syphilis and the standardized treatment in the syphilitic clinics of our great teaching institutions, we have an opportunity to obtain the latest knowledge of this still somewhat mysterious infection.

A. H. Peacock

Handbook of Communicable Diseases. By Franklin H. Top, A.B., M.D., M.P.H., Director Division of Communicable Diseases and Epidemiology, Herman Kiefer Hospital and Detroit Department of Health, etc., and Collaborators. With 73 Text Illustrations and 10 Color Plates. 682 pp., $7.50. The C. V. Mosby Co., St. Louis, 1941.

This book gives an adequate and authentic statement of all phases of all diseases commonly accepted as communicable in nature. Many excellent color pictures of common communicable disease manifestations, such as smallpox, chickenpox, scarlet fever, measles, etc. are included. Sections on tuberculosis, syphilis and gonorrhea would perhaps satisfy anyone except the specialists in chest diseases or syphilology. Certainly the book seems well suited for teaching needs of schools wishing a single text for a course in communicable diseases.

Prepared by a public health man, the book naturally reflects the health department interest throughout, with due consideration given to official regulations. For each subject there is an excellent statement of nursing care which would appear to be a great help to the nurse who undoubtedly many times finds herself facing a new problem, due to the fact that so few nursing schools have the opportunity to do bedside teaching in regard to all or even a large portion of communicable diseases. Appropriately, the frontispiece of the book is a color picture of a first day measles rash, this perhaps being the event which is observed the largest number of times by those who work with communiacble diseases.

Bryan Newsome

Shock Treatment in Psychiatry. By Lucie Jessner, M.D., Ph.D., Resident Psychiatrist, Baldpate, Georgetown, Mass., and V. Gerard Ryan, M.D., Associate Psychiatrist, Elmcrest Manor, Portland, Conn. With an Introduction by Harry C. Solomon, M.D., Clinical Professor of Psychiatry, Harvard Medical School. 149 pp., $3.50. Grune and Stratton, Inc., New York, 1941.

The introduction by Dr. Solomon states that shock treatment is here to stay whether we like it or not until new and improved treatments are available. Shock treatment is admittedly empirical and unsatisfactory from many standpoints but is definitely a step forward in treatment of psychoses. This small book discusses insulin therapy, metrazol convulsive treatment and electric shock therapy. Although this book does not say so, the electric shock is fortunately replacing metrazol, to which it is definitely superior in many respects. The physician who is already familiar with these treatments will find little new of help to him. This book is a fine introduction, however, for the uninitiated.

Fred Lemere

For the local Treatment of Acute Anterior **Urethritis**

(DUE TO NEISSERIA GONORRHEAE)

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A complete technique of treatment and literature will be sent upon request

■

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

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MRS. LOUISE L. HARRIS. R.N.
Superintendent

MICROBES WHICH HELP OR DESTROY US. By Paul W. Allen, Ph.D., Professor of Bacteriology and Head of the Department, University of Tennessee, D. Frank Holtman, Ph.D., Associate Professor of Bacteriology, University of Tennessee, and Louise Allen McBee, M.S., Formerly Assistant in Bacteriology, University of Tennessee. With 102 Text Illustrations and 13 Color Plates. 540 pp., $3.50. The C. V. Mosby Company, St. Louis, 1941.

"This book is the product of the average layman's need of becoming microbe conscious." Every layman desires to know the causes of disease. In a general way it is well known that some kind of microorganism is the responsible agent. Standard medical books are too complicated for general reading. Here is presented a volume with a minimum of technical phraseology, explaining in lucid terms the basic facts of prevailing diseases. Its comprehensive character is demonstrated by sixty-four chapters, nearly all of them dealing with separate diseases, others considering conditions connected with health or disease such as food poisoning, drinking water, milk and milk products. Furthermore, it extends to such subjects as contagious abortion in cattle, hog cholera, anthrax. Thus a great variety of conditions are discussed which are desirable for dissemination of general knowledge.

TEXTBOOK OF PATHOLOGY. Edited by E. T. Bell, M.D., Professor of Pathology in the University of Minnesota, Minneapolis, Minn. Fourth Edition. With 431 Engravings and 2 Colored Plates. 931 pp., $9.50. Lea and Febiger, Philadelphia, 1941.

This new edition of a popular textbook contains substantial revisions from the third edition. For those not previously acquainted with this volume, it may be stated that it is a good general text, intended primarily for medical students, of a subject for which several good textbooks are available, and among which it is difficult to choose. The present volume may be classed as one of the best. In contrast to some textbooks in this field, there is at least mention, however brief, of almost any disease process to which a student might conceivably have occasion to refer. Important diseases are discussed fully from the standpoint of pathologic anatomy. Pathologic physiology is not greatly stressed. In the opinion of this reviewer, the manner of treatment may be described as exact and conservative.

C. R. JENSEN

LECTURES ON WAR NEUROSES. By T. A. Ross, M.D., F.R.C.P. 116 pp., $2.00. The Williams & Wilkins Company, Baltimore, 1941.

This volume consists of lectures featuring acute war and chronic war neuroses. There is a discussion of preliminary conditions, featuring emotional reactions, education and heredity, fear of consequences, exhaustion, insomnia and other conditions, all of which precede the neurotic condition. In treatment much depends on the attitude of the physician. Thorough examination and sureness on his part are very important, will impress the patient and also make him sure. There is a discussion of hysterical paralysis, mutism, amnesia, malingering.

THE DOCTOR TAKES A HOLIDAY. An Autobiographical Fragment. By Mary McKibbin-Harper, M.D., 349 pp., $2.50. The Torch Press, Cedar Rapids, Iowa. 1941.

If one is interested in a fascinating book of travel, he will find this volume worth reading. It comprises visitations to various parts of the Orient, particular attention being paid to hospitals, methods of treating the sick and existing prevailing diseases. More detailed comments are made on conditions in India and China, also observations being recorded on modes of life, family relations and other intimate conditions which only a woman might observe. The literary style is attractive, with assurance of enjoyment of subsequent chapters. Interesting illustrations are scattered through the text which add to its attraction. One can recommend this volume to a physician seeking information concerning medical conditions in the Orient.

IMMUNITY AGAINST ANIMAL PARASITES. By James T. Culbertson, Assistant Professor of Bacteriology College of Physicians and Surgeons, Columbia University. 274 pp. $3.50. Columbia University Press, New York, 1941.

This book is one for advanced students who have a thorough knowledge of parasitology and immunology. It has an extensive review of literature with many valuable references from all over the world. It deals with natural and acquired immunity of the animal to parasites. It discusses antibody production and the mechanism of prophylaxis of immunity. This is an interesting and unique book with a specific place in parasitology.

ALFRED BALLE.

THE ESSENTIALS OF OCCUPATIONAL DISEASES. By Jewett V. Reed, B.S., M.D., F.A.C.S., and A. K. Harcourt, B.S., M.D., Indianapolis, Ind. 225 pp., $4.50. Charles C. Thomas, Springfield, Ill., and Baltimore, Md. 1941.

This book will be of great interest to the general practitioner as well as the industrial surgeon. Grouping industrial diseases in their various forms is taken care of in a clear, concise and understandable manner. Description is specific of aftereffects following poisons and diseases due to physical agents. The dermatology section is extremely interesting and well written. The chapters devoted to occupational diseases of the lungs deserve special comment in their well prepared manner regarding symptomatology, diagnosis and treatment. Chapter five, devoted to malignant diseases associated with occupations, is well written. This is a text that all physicians and surgeons would do well to read. E. H. SMITH

PRINCIPLES OF MICROBIOLOGY. By Francis E. Colien, B.S., M.S., Ph.D., F.A.P.H.A., Associate Professor of Bacteriology and Preventive Medicine in The Creighton University School of Medicine, etc., and Ethel J. Odegard, R.N., A.B., M.A., Instructor in Sciences Applied to Nursing, College of Saint Teresa, Winona, Minn., etc. With 140 Text Illustrations and 18 Color Plates. 444 pp., $3.00. The C. V. Mosby Company, St. Louis, 1941.

This book represents abstracts from the authors' lectures and laboratory outlines during teaching students and graduate nurses. Special attention is paid to what microorganisms do, rather than what they are. It covers a wide range of study of microorganisms, dealing with their biology, cultivation and methods of study. In addition to the study of individual organisms, attention is given to infection and immunity with the purpose of obtaining practical results. The study of pathogenic microorganisms consists of their morphology, characteristics, classification and conditions of disease in which they are active. Reading of this volume will be profitable to the physician as well as the nurse.

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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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OREGON BASIC SCIENCE EXAMINATION

Examination in basic sciences for Oregon will be held in the main library, Portland, February 15. The usual schedule of subjects includes anatomy, pathology, physiology, chemistry and hygiene. Application blanks and general instructions may be obtained from Charles D. Byrne, secretary, State Board of Higher Education, Eugene, Oregon. Applications should be filed in the secretary's office not later than January 29.

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DIRECTORY OF COUNTY MEDICAL SOCIETIES

IDAHO

Society	Meetings	President		Secretary	
Bonner-Boundary Counties Society		F. W. Durose	Bonners Ferry	C. C. Wendle	Sandpoint
Idaho Falls Medical Society		W. R. West	Idaho Falls	H. E. Guyett	Idaho Falls
Kootenai County Society		F. F. Horning	Coeur d'Alene	J. T. Wood	Coeur d'Alene
North Idaho District Society		W. S. Douglas	Lewiston	D. D. McRoberts	Lewiston
Pocatello Medical Society	First Thursday—Pocatello	N. H. Farrell	American Falls	B. C. Eisenberg	Pocatello
Shoshone County Society		W. C. Lindsay	Kellogg	J. R. Bean	Wallace
Southwestern Idaho District Society		L. E. Jewell	Meridian	W. B. Handford	Caldwell
South Side Society	Second Tuesday	H. E. Lamb	Twin Falls	H. L. Stowe	Twin Falls
Upper Snake River Society		Aldon Tall	Rigby	J. H. Culley	Rigby

OREGON

Society	Meetings	President		Secretary	
Baker County Society		C. A. Grant	Baker	Flora Biswell	Baker
Benton County Society	Second Friday	E. B. Monroe	Corvallis	W. H. Fortner	Corvallis
Central Oregon Society		Fred Lienallen	Bend	C. J. Rademacher	Bend
Central Willamette Society	First Thursday	Henry Gamjobst	Corvallis	E. H. Kelly	Corvallis
Clackamas County Society		E. A. Hendry	Canby	W. R. Eaton	Oregon City
Clatsop County Society		F. E. Boyden	Astoria	D. C. Prentiss	Astoria
Columbia County Society		P. H. Starr	Clatskanie	J. C. Barton	St. Helens
Coos and Curry County Society		R. H. Fields	Gardiner	R. M. McKeown	Marshfield
Douglas County Society		E. J. Wainscott	Roseburg	B. R. Shoemaker	Roseburg
Eastern Oregon District Society		R. R. Belknap	Ontario	W. J. Weese	Ontario
Jackson County Society	Second and Fourth Wednes	H. A. Woods	Ashland	C. W. Lemery	Ashland
Josephine County Society		W. W. Inkrote	Grants Pass	S. B. Osgood	Grants Pass
Klamath County Society	Second and Fourth Wednesdays	J. M. Adams	Klamath Falls	G. H. Adler	Klamath Falls
Lake County Society	Fourth Thursday	C. E. Leithead	Lakeview	J. H. Robertson	Lakeview
Lane County Society	Third Friday	R. C. Romig	Eugene	R. M. Overstreet	Eugene
Lincoln County Society		F. M. Hellwarth	Toledo	O. N. Callender	Toledo
Linn County Medical Society		R. E. Herron	Lebanon	F. E. Beauchamp	Albany
Malheur County Society		C. E. Palmer	Ontario	R. R. Belknap	Ontario
Mid-Columbia Society		C. E. Hardwick	Hood River	R. P. Atkinson	Hood River
Multnomah County Society	First and Third Wednesday	H. S. Lamb	Portland	B. O. Woods	Portland
Polk-Yamhill-Marian Medical Society	Second Tuesday	C. W. Emmons	Salem	B. A. Myers	Salem
Southern Oregon Medical Society		C. A. Haines	Ashland	E. A. Woods	Ashland
Tillamook County Society		M. R. Charlton	Tillamook	David Robinson	Tillamook
Umatilla County Society		Donald Wair	Pendleton	T. M. Barber	Pendleton
Union County Society	Fourth Tuesday	C. E. Branner	La Grande	E. T. Moon	La Grande
Wallowa County Society	First Thursday	A. F. Martin	Enterprise	E. L. Landers	Joseph
Yamhill County Society	Second Tuesday	C. L. Williams	McMinnville	A. G. Noble	McMinnville

WASHINGTON

Society	Meetings	President		Secretary	
Chelan County Society	First Wednesday—Wenatchee	J. E. Gahringer	Wenatchee	L. C. Miller	Wenatchee
Clallam County Society	Second Tuesday—Port Angeles, Sequim	I. E. Kaveney	Port Angeles	J. L. McFadden	Port Angeles
Clark County Society	First Tuesday—Vancouver	I. C. Munger	Vancouver	K. F. Stefan	Ridgefield
Cowlitz County Society	Third Wednesday	R. J. La Rue	Castle Rock	L. S. Roach	Kalama
Grays Harbor County Society	Third Wednesday—Aberdeen	L. L. Goodnow	Aberdeen	A. W. Riedesel	Aberdeen
Jefferson County Society		C. M. Schaill	Port Townsend	R. S. Crist	Port Townsend
King County Society	First and Third Mondays—Seattle	M. S. Jared	Seattle	David Metheny	Seattle
Kitsap County Society	Second Tuesday—Bremerton	Joseph Coyle	Bremerton	C. E. Benson	Bremerton
Kittitas County Society	Third Monday—Ellensburg and Cle Elum	R. R. Pinckard	Ellensburg	W. W. Hicks	Ellensburg
Klickitat County Society		R. L. Baker	White Salmon	Thomas Mead	Goldendale
Lewis County Society	Second Monday—Centralia and Chehalis	M. Couperus	Chehalis	Rush Banks	Centralia
[illegible] County Society		L. F. Wagner	Harrington	J. E. Anderson	Almira
Okanogan County Society		M. D. Wood	Tonasket	T. P. Conners	Tonasket
[illegible]c County Society	Third Saturday—Raymond and South Bend	F. W. Anderson	South Bend	O. R. Nevitt	Raymond
Pierce County Society	Second and Fourth Tuesdays—Tacoma	H. J. Whitacre	Tacoma	J. W. Read	Tacoma
Skagit County Society	Fourth Monday	W. V. King	Burlington	F. W. Baugh	Burlington
Snohomish County Society	First Thursday—Everett	J. F. Beatty	Everett	O. W. Anderson	Everett
Spokane County Society	Second and Fourth Thursdays—Spokane	J. M. Nelson	Spokane	R. G. Boyd	Spokane
Stevens County Society		W. H. Gray	Colville	Wesley Minzel	Colville
Thurston-Mason Counties Society	Fourth Tuesday—Olympia	L. M. Wilson	Olympia	E. E. Jones	Olympia
Walla Walla Valley Society	Second Thursday—Walla Walla	J. T. Rooks	Walla Walla	H. P. Kahler	Walla Walla
Whatcom County Society	First Monday—Bellingham	W. C. Moren	Bellingham	R. B. Boettner	Bellingham
Whitman County Society	First Thursday—Colfax	L. G. Kimzey	Pullman	E. N. Layton	Colfax
Yakima County Society	Second Monday—Yakima	H. C. Lynch	Yakima	J. P. Thompson	Yakima

Corrections and additions to this list are requested from the societies represented.

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ANNUAL MEETINGS OF MEDICAL SOCIETIES

American Medical Association..............**June 2-6, 1941—Cleveland**

Idaho State Medical Assn...............**June 18-21, 1941—Sun Valley**
President, A. M. Newton, Pocatello — Secretary, F. P. Jeppesen, Boise

Oregon State Medical Society..................................**1941—Portland**
President, K. H. Martzloff, Portland — Secretary, M. L. Bridgeman, Portland

Washington State Medical Assn...........**Aug. 24-26, 1941—Seattle**
President, H. D. Dudley, Seattle — Secretary, V. W. Spickard, Seattle

University of Wash. Extension Course....**July 14-18, 1941—Seattle**

North Pacific Pediatric Society............**Jan. 25, 1941 — Portland**
President, S. G. Henricke, Portland — Secretary, J. S. Backstrand, Salem

Pacific Coast Oto-Ophthal. Soc... **May 26-29, 1941—Los Angeles**
President, I. H. Jones, Los Angeles — Secretary, C. A. Dickey, San Francisco

Pacific Northwest Orthopedic Society....................**1941 — Spokane**
President, A. O. Adams, Spokane — Secretary, N. R. Brown, Spokane

Pac. Northwest Medical Assn...............**June 25-28, 1941—Spokane**

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Since the turn of the century, progress of the Company has continued apace. An aggressive program of research has been zealously pursued, marked by the introduction of such important medicinal products as Adrenalin, Ventriculin, Theelin, Pitocin, Pitressin, Mapharsen, Neo-Silvol, Antuitrin-S, Meningococcus Antitoxin, Dilantin Sodium, and many others. Diversified research activities cover the major phases of medical treatment, including the endocrine, biological, vitamin and chemotherapeutic, and new discoveries are carefully evaluated through the Company's extensive facilities for clinical investigation.

The Company's home offices and research and manufacturing laboratories in Detroit occupy six city blocks on the riverfront, adjacent to the Detroit-Walkerville ferry which connects the City of Detroit with the Province of Ontario, Canada. A beautiful farm of 700 acres, known as Parkedale and located near Rochester, Michigan, about 30 miles from Detroit, is utilized for the production of antitoxins, serums and vaccines, and for the cultivation of medicinal plants.

Through the use of full-pages in leading national magazines Parke, Davis & Company are carrying on an advertising program that has attracted wide attention. As might be expected, their advertising is unique, ethical, distinctive. They make no direct attempt to sell their products to the public by means of this publicity. In a sincere effort to render a valuable service to the medical profession, they are running a striking series of messages based on the "See Your Doctor" theme, and physicians throughout the country are constantly experiencing evidences of the results of this broad educational program.

MEANING OF THE TERMS "COLD BLOODED" AND "WARM BLOODED"

Explaining the meaning of the terms "cold blooded" and "warm blooded" in their relation to cold endurance, *Hygeia, The Health Magazine* says: "These are popular terms but they do not mean what they say. Warm blooded animals are those whose body temperature is maintained at the same level regardless of outside temperatures. A better name for them would be 'constant temperature animals.'

"Cold blooded animals are those whose temperature varies with the environment. They are able to sustain life in cold weather by adapting themselves to the low temperature through a variation of body temperature to correspond with the outside temperature. In cold weather they will be sluggish and in some instances appear to be dead.

"Among human beings differences in ability to withstand cold are determined in part by the amount of fat immediately under the skin Because they are better equipped in this respect, women withstand cold better than men.

ADVANCES IN CANNING TECHNOLOGY

II. Development of the Tin Container

● Appert, discoverer of canning, did not know the reasons why his procedure for food preservation was successful. He clearly recognized, however, that his containers must be so constructed and sealed as to prevent contact of the food therein with air, after heat processing. Today we know that this is necessary to prevent re-infection of the food with air-borne, spoilage microorganisms.

As containers, Appert suggested glass containers sealed by corks; the reason given is that glass is the "matter most impenetrable by air" (1). In 1810, one year after Appert's discovery was announced, Peter Durand, an Englishman, patented a procedure very similar to Appert's, which covered the use of a variety of containers, among them "vessels of tin (tin-plated iron)." From that time forward, the use of tin-plated containers rapidly progressed.

Commercial canning began in America about 1819. In 1825, Kensett and Daggett, two pioneers of canning in this country, received an American patent covering the use of tin-plated containers. Shortly thereafter, the name "tin can" was coined from the abbreviation of the formal name, "tin cannisters."

The story of the development of the tin can in America is an absorbing one which has been related in more detail elsewhere (2, 3, 4). By the time of the war between the States, the "hole and cap" type of can had been evolved. About 1890, can-making machinery was introduced to replace the older hand-manufacturing operations whereby a skilled artisan could produce about 6 cans per hour. Modern can-manufacturing lines operate at speeds as high as 350 cans per minute.

The first three decades of the current century witnessed the development of machinery to make the modern type or "sanitary style" can now universally used for fruits, vegetables, and a wide variety of other products. The past ten years have brought vast improvements in the tin plate from which cans are made. Not long ago, almost any type of sheet steel was considered satisfactory. Today plate for cans must comply with rigid physical and chemical specifications established by the Research Laboratory of the can manufacturer.

As far as can be determined, tin containers were first introduced to avoid breakage which was experienced with the glass containers proposed by Appert. The other desirable characters of the tin container for foods were not fully appreciated at first; among these advantages should be mentioned its rapid rate of heat transfer, its low weight in relation to its capacity, and its opacity to light. Nor was the importance which the tin can has attained in our national life fully appreciated until world developments caused America to pause and take inventory. Only then was it generally realized that from its humble start 130 years ago, the tin can has risen to become an indispensable article in our modern civilization.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

REFERENCES

(1) 1811. The Art of Preserving. M. Appert, Black, Parry and Kinsbury, London.

(2) 1937. The Canning Clan. E. C. May, The Macmillan Co., New York.

(3) 1937. Appertizing. A. W. Bitting, The Trade Pressroom, San Francisco.

(4) 1940. The National Geographic Magazine, November, p. 659.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned-foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the sixty-eighth in a series which summarizes, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.

The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

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NEW COLOR FILM ON VITAMIN B COMPLEX

The apparently high incidence of sub-clinical deficiency states associated with lack of the vitamin B complex and the difficulty of recognizing and diagnosing such conditions make the announcement of a new motion picture on the vitamin B complex one of special interest. The title of the new film is "The Vitamin B Complex;" it is entirely in 16 mm. Kodachrome. A *sound* as well as a *silent* version is available to medical societies and medical schools.

The film is based largely on clinical material from the Nutrition Clinic, Hillman Hospital, Birmingham, Ala. The cases selected for the most part were not so much those exhibiting the classical syndromes, but rather were of the mild type frequently involving mixed deficiency states and less endemic in character.

A brief discussion of the physiological properties of the individual and better known members of the vitamin B complex introduces the film and serves as a background for the very generous exposition of the various clinical cases that comprise the balance of the picture. Not the least interesting of the features of the film is the marked fidelity of the colors to the dermatological lesions which are reproduced.

Special emphasis is given in the film to the promptness and specificity of the therapeutic response when diagnosis has been correct. The dietary management of B complex deficiency states is outlined and harmonized with the application of the separate crystalline components of the complex.

The film, "The Vitamin B Complex," was produced under the supervision of the scientific and medical staffs of E. R. Squibb & Sons, and was reviewed before release by authorities of international repute in the field of medicine and nutrition. There is no advertising in the film which is offered solely as a conservative review of the present status of the subject. Inquiries with reference to the loan of the film may be addrssed to E. R. Squibb & Sons, Professional Service Department, 745 Fifth Avenue, New York, N. Y.

MEDICAL EDUCATION CONGRESS TOPICS

"This year special emphasis is placed on medical preparedness as it affects the training of physicians," *The Journal of the Americal Medical Association* for Jan. 25 points out in announcing that the Thirty-Seventh Annual Congress on Medical Education and Licensure, under the sponsorship of the Association's Council on Medical Education and Hospitals, will be held Feb. 17 and 18 at the Palmer House, Chicago.

"In these conferences the Federation of State Medical Boards actively participates," *The Journal* says. "Other topics to be presented are the adjustment of medical education to social demand, and contribution of liberal education to professional training, the educational purpose of the standard nomenclature of disease, and the education of the Negro physician. Of particular interest to members of licensing boards will be papers dealing with the legal status of physicians and the enforcement of medical practice laws. All who may be interested are invited to attend."

VISION IN THE SCHOOLROOM

Because of the intensive visual work done in the classroom, it is imperative that the physical arrangements of schools have provisions for safeguarding the sight of the pupils, Constance J. Foster, Great Neck, N. Y., states in *Hygeia, The Health Magazine.*

"The more exacting the eye work, as in drawing and sewing classes, the more illumination is required for ease of seeing," she says. "Adjustable tilt-top desks help to bring work to the proper angle of vision. The desk should be high enough to prevent stooping or slumping. Work held 13 to 15 inches from the bridge of the nose is easiest on the eyes."

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For the Local Treatment of Acute Anterior
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A complete technique of treatment and literature will be sent upon request

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Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae. (1) An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph. Gon. & Ven. Dis., 23, 201 (March) 1939.

*Silver Picrate, is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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EDUCATIONAL NEEDS OF CHILDREN

Children differ not only in the speed with which they can learn the material presented in school classes but also in the type of material which meets their needs, Frank L. Beals, Chicago, points out in the March issue of *Hygeia, The Health Magazine.*

"Children who are highly endowed do not do the same things more rapidly than children of average intelligence; they do them differently," he says. "Higher intelligence requires an enlarged scope for creativeness; lower intelligence requires an enlarged scope for habit formation."

Shadel Sanitarium

Exclusive for the Treatment of

CHRONIC ALCOHOLISM

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MEDICINE — Two Weeks Intensive Course starting June 2nd. One Month Course in Electrocardiography and Heart Disease every month, except August and December.

FRACTURES AND TRAUMATIC SURGERY — Two Weeks Intensive Course starting May 5th and June 30th. Informal Course every week.

GYNECOLOGY — Two Weeks Intensive Course starting April 7th and June 16th. Clinical, Diagnostic and Didactic Course every week.

OBSTETRICS — Two Weeks Intensive Course starting April 21st. Three Weeks Personal Course starting May 26th. Informal Course every week.

OTOLARYNGOLOGY — Two Weeks Intensive Course starting April 7th. Informal and Personal Courses every week.

OPHTHALMOLOGY — Two Weeks Intensive Course starting April 21st. Informal Course every week.

ROENTGENOLOGY — Courses in X-Ray Interpretation, Fluoroscopy, Deep X-Ray Therapy every week.

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ANNUAL MEETINGS OF MEDICAL SOCIETIES

American Medical Association..............June 2-6, 1941—Cleveland

Idaho State Medical Assn...............June 18-21, 1941—Sun Valley
President, A. M. Newton, Pocatello — Secretary, F. P. Jeppesen, Boise

Oregon State Medical Society................Sept. 3-6, 1941—Portland
President, K. H. Martzloff, Portland — Secretary, M. L. Bridgeman, Portland

Washington State Medical Assn.............Aug. 25-27, 1941—Seattle
President, H. D. Dudley, Seattle — Secretary, V. W. Spickard, Seattle

University of Wash. Extension Course....July 14-18, 1941—Seattle

North Pacific Pediatric Society............Jan. 25, 1941 — Portland
President, S. G. Henricke, Portland — Secretary, J. S. Backstrand, Salem

Pacific Coast Oto-Ophthal. Soc.....May 26-29, 1941—Los Angeles
President, I. H. Jones, Los Angeles — Secretary, C. A. Dickey, San Francisco

Pacific Northwest Orthopedic Society.....................1941 — Spokane
President, A. O. Adams, Spokane — Secretary, N. R. Brown, Spokane

Pac. Northwest Medical Assn...............June 25-28, 1941—Spokane

Washington State Obstetrical Assn.............April 5, 1941 — Seattle

PROFESSIONAL ANNOUNCEMENTS

DOCTOR WANTED

By Dr. Sam C. Standard to occupy office and assume part of duties of Dr. James F. Standard who has been called to active duty by the navy until February, 1942. Office rent, office equipment and reasonable remuneration for services rendered. Opportunity for establishing own practice. Address 1303 Medical & Dental Bldg., Seattle, Main 4016.

LOCUM TENENS DESIRED

A doctor is available during the months of April, May, June and July to care for the practice of a physician who desires a substitute during this period. Is qualified to do general practice, also care for Eye, Ear, Nose and Throat work. Address C, care Northwest Medicine, 225 Cobb Building, Seattle, Wash.

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Office equipment and thirty-year location in practice for sale for $500. Small payment down and balance monthly. Address Dr. H. M. Dumble, care Mr. R. E. Scott, Hood River, Oregon.

DOCTORS WANTED

Physicians are wanted for temporary employment in Alaska during June and July. Give particulars as to previous experience and references. Address S, care Northwest Medicine, 225 Cobb Bldg., Seattle.

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Amniotin Relieves Menopausal Symptoms

THE list of papers attesting to the clinical value of Amniotin in alleviating distressing menopausal symptoms is very substantial in number. As early as 1929 Sevringhaus and Evans[1] reported Amniotin to be "of marked value in the relief of the vasomotor phenomena of the menopause."

Indicative of the effectiveness of this endocrine therapy is the recent statement by Novak[2] that: "Whereas formerly there was much difference of opinion among clinicians as to the efficacy of hormone treatment, opinion is now unanimous that it is of genuine value. In fact, organotherapy for menopausal symptoms is looked upon as one of the more satisfactory applications of endocrine knowledge in the field of gynecological practice."

Complete relief is more easily obtained if treatment is started early and adequate dosage used. The milder forms of disturbance often can be controlled by the oral administration of Amniotin in capsules. Larger doses, administered intramuscularly, are suggested for resistant cases or in the surgical menopause.

Amniotin is a highly purified preparation of naturally occurring estrogens. It is available in Capsules containing the equivalent of 1000, 2000 and 4000 International units of estrone; in Pessaries of 1000 and 2000 I. U.; and in 1-cc. ampuls containing 2000, 5000, 10,000 and 20,000 I. U.

---

[1] Sevringhaus, E. L., and Evans, J. S.: *Am. J. M. Sc.* 178:638, Nov. 1929.

[2] Novak, Emil: *Surg. Gynec. & Obst.* 70:124, Jan. 1940.

For literature address the Professional Service Department,
E. R. Squibb & Sons, 745 Fifth Avenue, New York, N. Y.

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OBTAINED FROM THE URINE OF PREGNANT MARES

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PECTIN IS AMONG NEWEST BY-PRODUCTS OF THE CITRUS FRUIT INDUSTRY

One of the newest by-products of the citrus industry is pectin, the powder used so extensively in preparing jellies and jams, which has formerly been derived chiefly from apples, John Fassett Edwards, M.D., Easton, Pa., says in the February issue of *Hygeia, The Health Magazine* in an article disucussing citrus fruits. The white rind between the skin and pulp of these fruits supplies large amounts of pectin, he says.

Other by-products of the citrus industry are oil of orange and oil of lemon, both of which are used to flavor soft drinks, candy and other foods.

Dr. Edwards points out that although some kinds of oranges have green skins even when mature, "because of a consumer preference for an orange with an orange colored skin, it has become customary for distributors to dip mature, green-skinned oranges in a harmless orange dye to give them a uniform color. The dye used is a coal-tar by-product and has been certified by the Federal Food, Drug and Cosmetic Administration as harmless and suitable for this purpose. But the administration has ruled that all fruit thus dyed must be labeled 'color added.' And while the juice from oranges with partly green skins may not be as sweet as the juice from oranges that are naturally orange skinned, they contain equal amounts of vitamin C.

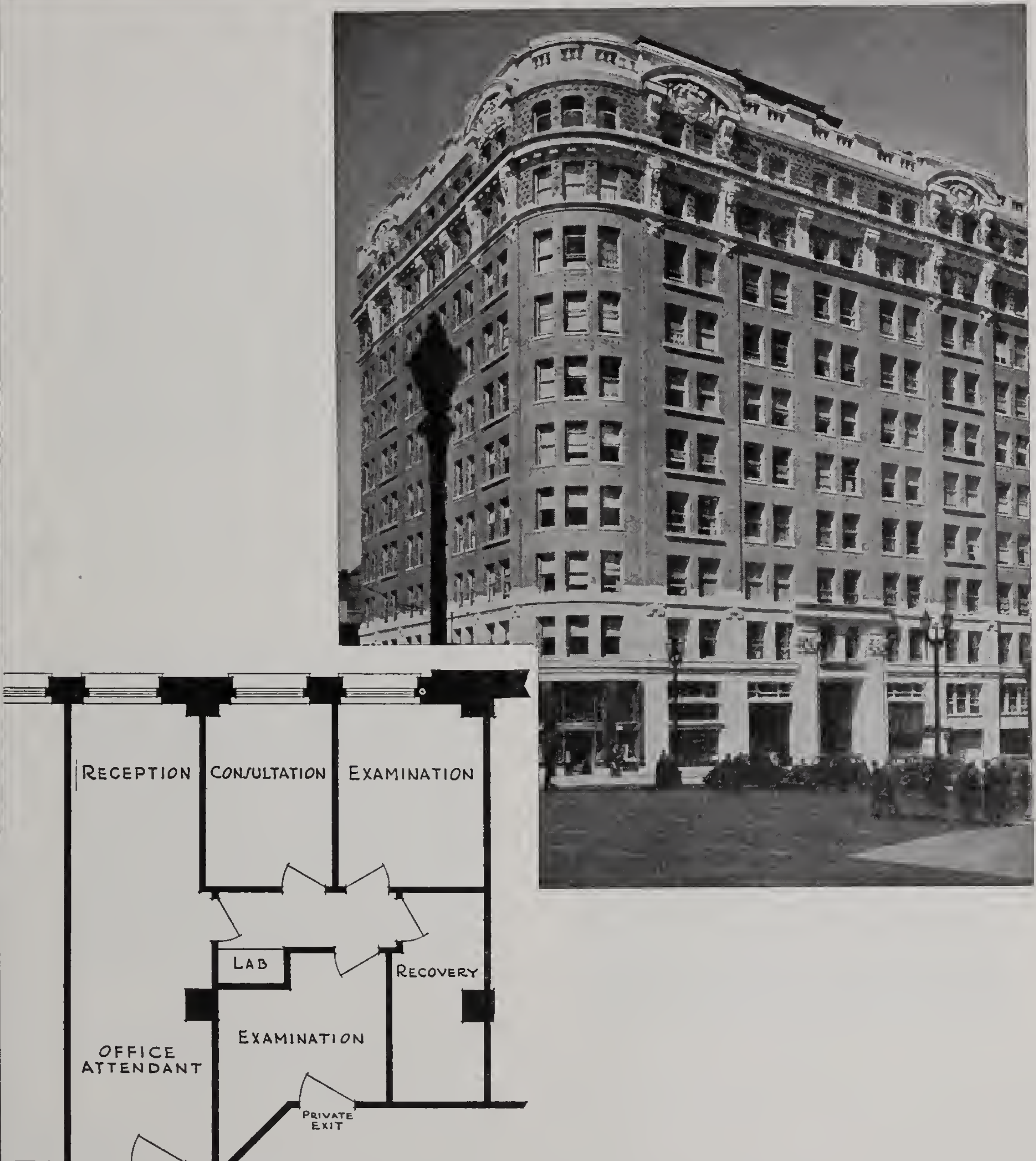
"Citrus trees are planted with geometrical precision with from 75 to 100 trees to the acre. Sufficient room must be left for proper irrigation, picking, spraying, etc. It usually costs more to raise lemons than it does to produce oranges. The per acre yield of oranges is about 207 packed boxes, while lemon trees produce only about 197 packed boxes."

In a discussion of the history of these fruits, Dr. Edwards says: "In the Yuen dynasty the Chinese so much appreciated the use of lemons in maintaining sound health that they burst into poetic ecstacy over their beloved *li-mung*—from which stems the 'lemon' of our language. Literally, *li-mung* means fruit beneficial to a pregnant woman. During pregnancy, the dietary need for lime salts increases.

"Oranges and lemons were carried, probably by the Arabs, from China and India to the Mediterranean region about the time of the Crusades. There they soon became the principal fruits, and centuries later when the Moors invaded Spain, they too carried oranges with them. But when or how the edible citrus fruits reached the Americas is unknown."

HARM OF MAKING CHILDREN DIFFERENT

"There probably is no unhappier child than the one whose parents insist that he be different, wear different clothes, have a different kind of haircut, or in some other way be made conspicuous," Douglas E. Lawson, Ph.D., Carbondale, Ill., declares in *Hygeia, The Health Magazine.* "Children's personalities carry the scars, sometimes for life, when parents attempt this kind of personality surgery in the effort to create an improved variety of child."



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VENTILATING SYSTEMS MAY BE FACTOR IN SPREAD OF DISEASE

The possible role of ventilating systems in the spread of disease is one that shold be further studied, *The Journal of the American Medical Association* for Feb. 15 says in commenting on the findings made in a recent study of such a nature.

"In present day air conditioning systems 90 per cent of the cooled air is often recirculated," *The Journal* says. "The redistribution of air from an infected space to noninfected areas might conceivably become a factor in the spread of disease. In a recent study of the role of ventilating systems in the transmission of microorganisms (any minute animal or plant) bacteria (B. subtilis spores), which can be readily distinguished from other organisms usually found in air, were introduced in two different ventilating systems and the distribution of the spores was studied.

"The first ventilating system, which was provided with a paper-tissue filter, was located in a small auditorium. In one instance the spores were introduced beyond the filter and were thus not filtered, and in another experiment the spores were introduced in front of the filter and the air carrying them was filtered before being circulated. Fifteen minutes after the spores were introduced beyond the filter, analyses indicated the presence of 21.9 organisms to 10 cubic feet of the air in the auditorium. One hour after the spraying of the spores no organisms could be found in the air. Fifteen minutes after spraying spores in front of the filters only 3.7 organisms were present in 10 cubic feet of the air and after an hour these too had disappeared.

"In another series of experiments spores were introduced at different points in the ventilating system of a large building. Analyses of the air in two rooms of the building showed a maximum concentration of organisms during the spraying, which in these experiments lasted for a twenty minute period during a short period (one half hour) thereafter. The number of organisms then decreased rapidly and within a relatively short time the count returned to a normal level. This rapid decrease is attributable to the dilution factor, and to the action of the filter, as well as to the loss occasioned by surfaces such as the walls and floor.

"These experiments were made under the most favorable conditions for the transmission of bacteria in ventilating systems, the number of spores being far in excess of that which might be possibly expected to occur normally and the spraying being done at advantageous points, and they demonstrate that bacteria may be spread in this way, although the menace seems slight.

"The problem merits further study from the point of view of public health."

RADIO REGULATION SHOWS HOW DEFENSE INFLUENCES CIVILIAN ENDEAVORS

The many fields of civilian endeavors affected by the defense needs of a nation are well illustrated in a recent regulation established by the British government and commented on by *The Journal of the American Medical Association* for Feb. 15.

The Journal says that it recently "called attention to the discussions now going on between members of the medical profession, including representatives of the Council on Physical Therapy of the American Medical Association, and government officials relative to suitable manufacture or control of high frequency apparatus which interferes with radio reception. In Great Britain it has been found desirable in the prosecution of the war to place governmental restrictions on the use of such apparatus. It is now necessary in that country for any person with such apparatus in his possesion to have a permit from the postmaster general for its operation. Apparatus included under the control is diathermy (producing heat in body tissues by means of high frequency electric currents) and electromedical equipment which uses valves or spark coils. The unauthorized possesion of such apparatus constitutes an offense under the defense regulations. The purpose of control is obviously to reduce the number of sources of electrical disturbance so that proper use of radio as a defense mechanism may continue."

REPORT CASE OF RARE INFECTION SIMILAR TO TYPHOID

An instance of an apparently rare blood stream infection similar to typhoid due to the organism, Salmonella suipestifer, is reported by A. E. Hardison, M.D., and A. B. Shipley, M.D., Nashville, Tenn., in *The Journal of the American Medical Association* for March 1.

The illness of the patient, a cotton mill superintendent, lasted for twenty-seven days, during which there were fever and chills followed by vomiting and profuse sweating. Death occurred from respiratory failure. Blood studies suggest that Salmonella suipestifer was the causative and not a secondary invading organism, the report says.

A study of possible avenues of infection gave no clue, but the author says: "The possibility of a rodent-borne infection cannot be dismissed. This condition is rare, judging from reports in the literature. It may be that if thorough laboratory work was done in all cases of prolonged fever and of gastroenteritis (stomach and intestinal inflammations), the distribution of Salmonella suipestifer in man would be found more widespread."

PHENOBARBITAL SHOULD BE GIVEN FIRST IN SMALL DOSES, PHYSICIANS WARN

Because of the potential danger of phenobarbital medication, Daniel L. Sexton, M.D., George M. Pike, M.D., and Arthur Nielson, M.D., St. Louis, declare in *The Journal of the American Medical Association* for Feb. 22: "It would seem advisable to administer the drug first in small doses, increasing the dosage gradually until the patient's tolerance is established.

"Withdrawal of the drug at the first appearance of the rash is the safest procedure. Even then a severe constitutional (bodily) reaction may occur, but for the most part a fatal outcome will be averted. The tolerance of phenobarbital depends on individual susceptibility."

The authors say they are presenting their report of a fatal case because of the few autopsy records available on this subject. The poisonous effects of phenobarbital for the most part are limited to a skin eruption which subsides soon after the withdraway of the drug, they state. In an occasional case a severe reaction of the body as a whole occurs in which exfoliative dermatitis (inflammation of the skin with shedding in patches) is one of the manifestations.

Bronchopneumonia has been reported in the majority of autopsy studies, but otherwise the conditions found are inconstant.

The author's patient was a 39 year old man who was admitted to the hospital with complaints of stomach pain and vomiting of three months' duration. He had had indigestion with belching and pain after meals for many years in varying degrees of severity, but this became so severe in the two weeks prior to entrance to the hospital that he retained practically no food. He stated that he had not taken any medication or drugs before entrance.

A diagnosis of peptic ulcer (an ulcer on the mucous membrane of the stomach or first portion of the small intestine) was made. Because of vomiting, phenobarbital in solution was given beneath the skin three times daily, and atropine sulfate was also given. The patient did very well on this regimen. On the eighth hospital day soluble phenobarbital and atropine were omitted and regular phenobarbital was given three times a day by mouth.

Improvement continued until the twelfth hospital day, when the patient complained of a feeling of general discomfort and the previously normal temperature rose to 103 F. At this time he had no specific complaints and no eruption. On the following morning the temperature was 104 F. and the patient complained of sore throat and difficulty in swallowing. The skin was covered with a generalized eruption, consisting of red spotted lesions.

Phenobarbital was immediately discontinued. However, within twenty-four hours the lesions of the skin progressed so rapidly that in many places they merged and involved large areas of the skin, which soon began to shed. The patient was semiconscious until his death three days after the appearance of the eruption. Postmortem examination revealed involvement of the lobes of the lungs.

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THE FOUNDATION PRIZE

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons offers a prize of $150, known as "The Foundation Prize." Contestants may include interns, residents, graduate students and physicians practicing obstetrics, gynecology or abdominal surgery. Manuscripts must be limited to 5,000 words. All manuscripts with illustrations must be in the hands of the secretary before June 1. The award will be made at the annual meeting of the Association. The secretary is James R. Bloss, M.D., 418 Eleventh St., Huntington, West Virginia.

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Idaho State Medical Assn.	**June 18-21, 1941—Sun Valley**
President, A. M. Newton Pocatello	Secretary, F. P. Jeppesen Boise
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President, H. D. Dudley Seattle	Secretary, V. W. Spickard Seattle
University of Wash. Extension Course	**July 14-18, 1941—Seattle**
North Pacific Pediatric Society	**Jan. 25, 1941 — Portland**
President, S. G. Henricke Portland	Secretary, J. S. Backstrand Salem
Pacific Coast Oto-Ophthal. Soc.	**May 26-29, 1941—Los Angeles**
President, I. H. Jones Los Angeles	Secretary, C. A. Dickey San Francisco
Pacific Northwest Orthopedic Society	**1941 — Spokane**
President, A. O. Adams Spokane	Secretary, N. R. Brown Spokane
Pac. Northwest Medical Assn.	**June 25-28, 1941—Spokane**
Washington State Obstetrical Assn.	**April 5, 1941 — Seattle**

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Doctor wanted in small, growing, western Washington town to take over established practice of retiring doctor. No deposit required. Home available. Give reference and full particulars. Address P, care Northwest Medicine, 225 Cobb Building, Seattle, Wash.

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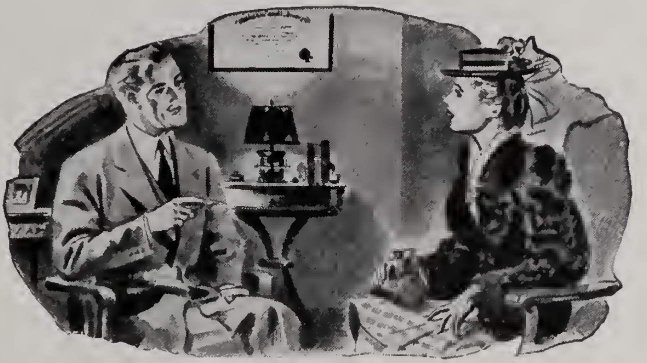

Q. *But, doctor, is it all right to leave the peas I don't eat in an open can?*

A. *From the standpoint of health, there is no reason why peas, or any canned food, should be put into another container.* (1)

(1) For some obscure reason many members of the general public persist in believing that an open can is not a safe food container. The U. S. Department of Agriculture expressed itself on this fallacy in a press release of February 23, 1936, as follows:

". . . Thousands of housewives are firm in the faith that canned foods ought to be emptied as soon as the can is opened, or at least before the remainder of the food goes into the refrigerator . . . Whether in the original can or in another container, the principal precautions for keeping food are—Keep it cool and keep it covered." *American Can Company, 230 Park Avenue, New York, N. Y.*

The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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REPORT FIRST AMERICAN CASE OF CYST IN FINGER JOINT

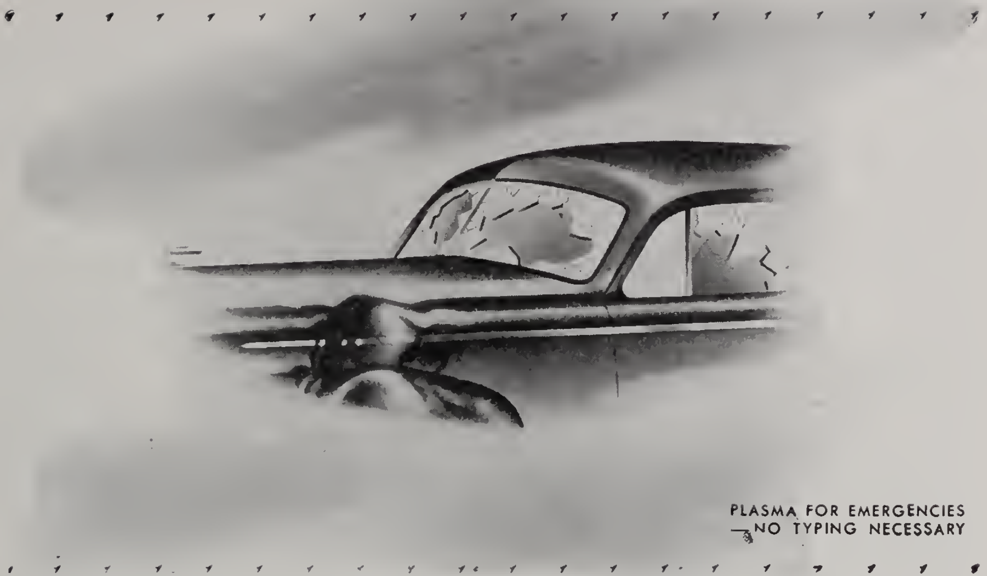
The first American case and the sixth in medical literature of an epithelial (outer skin and mucous membrane covering) cyst enclosed in the bony part of an end joint of a finger is reported in *The Journal of the American Medical Association* for March 22 by Samuel C. Yachnin, M.D., Passaic, N. J., and Frederick Summerill, M.D., Middletown, N. Y.

They say there are two possible explanations of its origin, either congenital (born with) malformation with misplacement of the epithelial cells during the embryo stage of life, or an injury which implants the cells in the bony structure.

In each of the six cases reported there was a history of a crushing or penetrating injury which damaged the nail bed. C. Friedländer, the proponent of the first theory, claims that the misplaced cells are stimulated to growth by injury. However, Drs. Yachnin and Summerville state that "it is difficult to accept the view of congenital origin, for trauma (injury) was a constant finding. . . . We feel, therefore, that these tumors are caused by the implantation of epithelial cells into the bone as a result of the injury. This could take place through the smallest kind of a fracture or even by transmission along the vascular (blood vessel) channels. . . . The rate of growth of the tumor appears to be quite slow. In four cases the injury was sustained from thirteen to fourteen years before the appearance of symptoms, while in Friedländer's case the interval was one year and in our case two years. . . . No recurrence has been reported following treatment by amputation."

SELECTION OF BLOOD BANK DONORS

Only those persons who have been born in this country and who have never lived in districts where malaria is prevalent should be used as donors for blood banks, Ernest F. Gordon, M.D., Yonkers, N. Y., advises in *The Journal of the American Medical Association* for March 22. He says that such a policy will minimize the possibility of spreading the disease from man to man.



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CLINICAL FORUM

A PEDIATRIC DIAGNOSTIC PROBLEM

History: Male infant, age 3 months, normal birth; normal development for two months when a mass suddenly appeared in left side of neck. No reason for appearance of the mass known; it was soft and fluctuant, non-inflammatory, there was no fever, no pain, no digestive or bowel disturbance. Mass increased rapidly for two days, varied slightly in size for three days more, then remained constant, becoming tense when infant cried or strained.

Physical Examination five days after first appearance of mass: . . . general physical condition normal, no fever. Soft, fluctuant swelling on left side of neck about two inches in diameter, no pulsation, not tender. Blood count and urinalysis normal, no redness of throat or ear drum, no interference with respiration. Aspiration with a fine hypodermic needle yielded blood and there was some difficulty in stopping the bleeding from the puncture.

Two weeks later examination was still normal except for local findings as follows: Mass was same size, soft, compressible, bluish color, becoming tense on crying, appearance suggestive of varicosities faintly visible, external jugular vein clearly identified distance from mass. Mass did not extend beneath clavicle or as high as the mastoid region, and appeared to be in the superficial tissues, but had a broad base, apparently originating beneath the posterior edge of the sternomastoid muscle; low, rounded, firm mass about three-fourths inches in diameter could be felt at the base. No thrill or bruit, and no involvement of the facial nerve.

What is your diagnosis, how would you meet it and what is the prognosis?

The problem in Obstetrics, presented last month actually was met by classical Cesarian. The mother experienced a normal recovery. She and the baby left the hospital two weeks later in good condition. Stimulating and instructive comments have been offered.

Dr. L. J. S. states:

I would give hypo 1/6 gr. morphine and allow the woman and her musculature to get some rest. The pains will start up again of their own accord and when they do I would give no more paralydehyde or other sedatives, so as to have the co-operation of the patient.

When the pains start up again we will in all probability have sufficient moulding of the head so that we will get a normal delivery. The pains will also be more expulsive when they start up again and if advisable I would give more pituitrin.

If, after three hours there is no delivery, I would apply forceps as the head is fixed in the pelvis.

A member of the Oregon State Maternal and Child Welfare Committee expresses a valued opinion:

In this case report there is a great deal of extraneous material, but the one salient feature which should be known about such a patient has not been given, and that point is: *what is the patient's internal conjugate measurement?* In other words, it should have been determined long before that patient was allowed to go into labor whether or not that baby's head would come through that mother's pelvis. It says, "her measurements were a little bit under the average, except the Baudelocque's which was 19½ cm." This is the type of obstetrical reasoning which is sloppy and unscientific. Whether measurements are average, a little bit under the average, or over average has nothing to do with the case. What are the measurements of that mother's pelvis with relation to the size of the baby's head which must come through it. If the baby is a ten and a half-pound baby, the measurements "a little bit under the average" or average would not suffice. However, if that baby's weight is six and one-half pounds, "a little bit under the average" would be sufficient. *Two days after the rupture of membranes is a poor time to determine what the conduct of a given obstetrical case should be.* As you know, the Baudelocque's measurement (external conjugate) is purely a relative one. The measurement which determines whether or not that head can come through that pelvis is the internal conjugate. The Baudelocque's measurement has far too many variables, such as the degree of tilt of the pubis, the thickness of the sacrum, the degree of lumbar curve, the angle of the birth canal.

Also, it says, "the anterior fontanel was at 1 o'clock." It seems to me that it would be much more scientific and accurate to state that the baby was in a right occiput posterior position.

No doubt in answer to this question you will receive many letters, some advocating manual or forceps rotation of the head, version and extraction, low cervical section, etc., etc., ad nauseam. In such a case as this there is one right mode of conduct, and this mode is the same whether that patient is in a small country community or in a community with large hospitals and excellent facilities. Let us say that, instead of this being a woman having her baby and being attended by a doctor in the country district where work is unlimited in scope, this was a case of a ruptured gastric ulcer in a man. In such a case there is one correct method of treatment—transporting that man to a location where facilities are adequate, and undoubtedly this would be done by any physician worthy of the name. In the case of a woman in labor, whose condition is poor, the necessity of transporting her to a location where adequate care can be given is even more important because there are two lives at stake instead of one. Because childbirth is so common an occurence, a certain fatalistic attitude has developed, and serious complications which arise in rural districts are not met with the same display of energy to take the patient to more adequate surroundings as is displayed when some other type of surgical emergency arises.

The excellence of these comments lies in the unreserved dissection of the case report and open criticism of its presentation. A frank and able annotator attracts attention toward better obstetrics and gives a real stimulation to produce honest work.

It is a regret, since "there is one right mode of conduct" of this case, it was not stated specifically. Many general practitioners are confronted with this problem and honestly endeavor to meet it in remote places. Proper procedures written repeatedly will finally be heeded, with resultant improved obstetrics.

The gastric ulcer analogy emphasizes that sad situation that maternity cases have been diagnosed and accepted as eventually and inevitably terminating somehow, ever since Adam and Eve's first obstetrical adventure. The newer diagnosed condition (represented by the "ulcer") demands and receives immediate and expert attention, but it is too much a matter of general complacent acceptance that any one, the Naturopath, Chiropractor, Midwife, General Practitioner or Obstetrician, can look after a confinement case.

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President, A. O. Adams Spokane	Secretary, N. R. Brown Spokane
Pac. Northwest Medical Assn.	**June 25-28, 1941—Spokane**
North Pacific Pediatric Society	**June 21, 1941—Vancouver, B. C.**
Secretary, G. O. Matthews Vancouver	
Washington State Obstetrical Association	**Oct. 4, 1941—..........**

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American College of Physicians..........April 20-24, 1942—St. Paul

Washington State Medical Assn..........Aug. 25-27, 1941—Seattle
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Secretary, G. O. Matthews, Vancouver

Washington State Obstetrical Association..........Oct. 4, 1941—..........

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Hospital administrator, middle aged, now employed, wishes position as business manager for partnership clinic, preferably on Coast. Fifteen years experience in hospital and clinic management. Well qualified in accounting, collections and tax work. Can furnish best references. At liberty soon. Address M, care Northwest Medicine, 225 Cobb Building, Seattle, Wash.

LOCATION DESIRED

Physician desires location, partnership or industrial appointment. General practice or industrial medicine preferred. Washington license. Highest references. Address J, care Northwest Medicine, 225 Cobb Building, Seattle, Wash.

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Urologist, age 32, Protestant, eligible certification, desires assistantship with view to future partnership or group appointment. Address U, care Northwest Medicine, 225 Cobb Building, Seattle, Wash.

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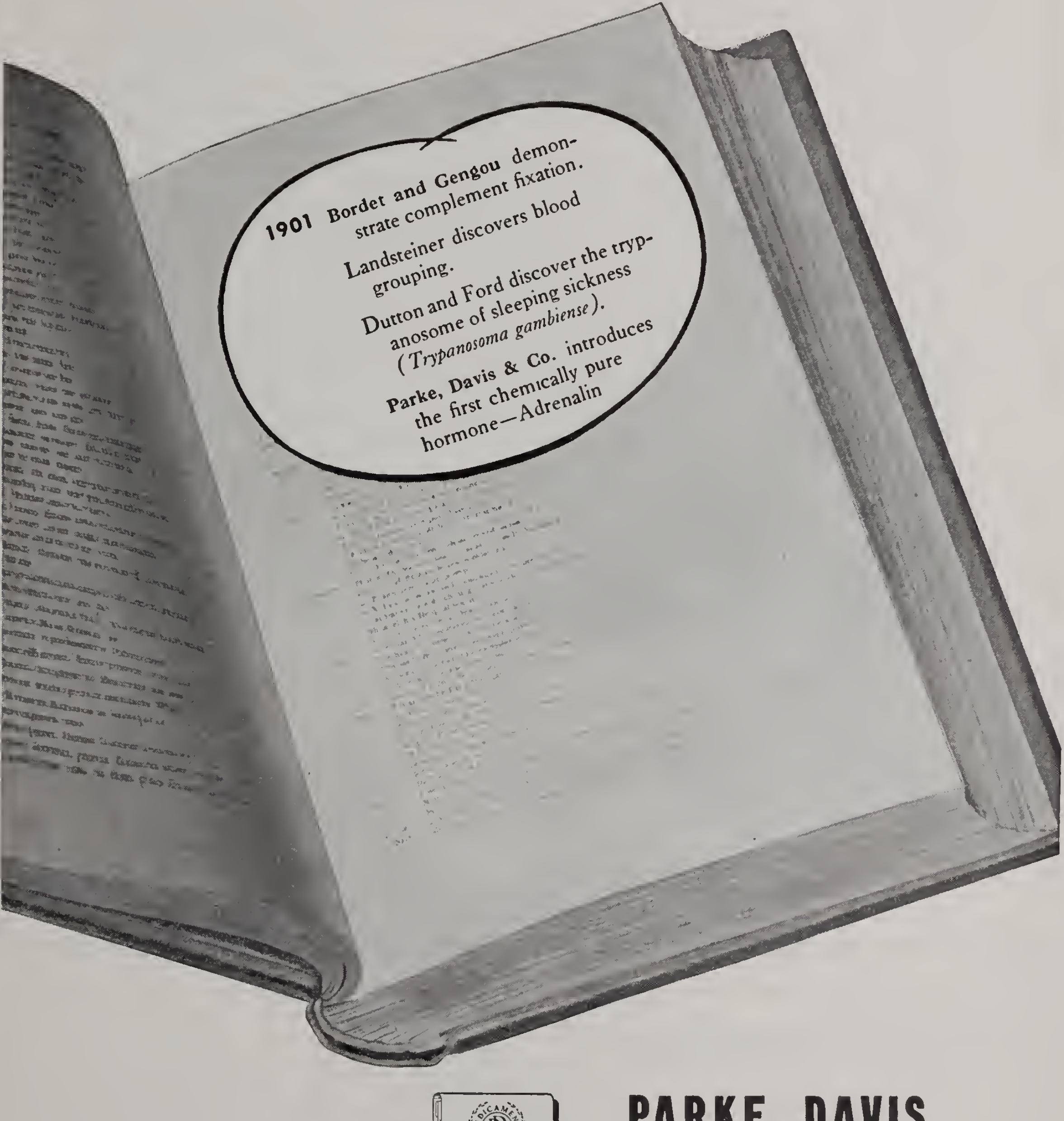

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[Continued on Page 27]

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ADVISES CARE IN INTERPRETING COMPARATIVE MORTALITY DATA

Extraordinary caution should be employed in the interpretation of comparative mortality statistics, *The Journal of the American Medical Association* for May 31 advises.

"In a carefully documented discussion on mortality statistics," *The Journal* says, "(G. H.) Van Buren points out a number of deductions which cannot be proved by such data. Entirely too much importance and finality, he says, are attached to many crude death rates. Thus, if calculations from the crude death rates for cancer over the twenty-five year period 1911-1935 are made, one would conclude that the mortality rate had increased over 41 per cent in the last year of the time series as compared with the first year. When corrected, however, for the effect of the changing age distribution, it develops that the increase was only 14.5 per cent—an entirely different picture."

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FRACTURES AND TRAUMATIC SURGERY — Two Weeks Intensive Course starting September 22nd. Informal Course every week.
GYNECOLOGY — Two Weeks Intensive Couhse starting October 20th. One Month Personal Course starting August 25th. Clinical Course every week.
OBSTETRICS — Three Weeks Persanal Course starting August 4th. Two Weeks Intensive Course starting Octobeh 6th. Informal Course every week.
OTOLARYNGOLOGY — Two Weeks Intensive Course starting September 8th. Informal Course every week.
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ROENTGENOLOGY — Couhses in X-Ray Interpretation, Fluoroscopy, Deep X-Ray Therapy every week.

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FOURTH OF JULY FIREWORKS INJURIES

"This year, as in the previous four years, the American Medical Association is circularizing hospitals, dispensaries and other institutions in the United States with a view to compiling a record of the deaths and injuries resulting from celebration of the Fourth of July with fireworks," *The Journal of the American Medical Association* for June 14 says. "As the result in large part of these annual summaries, several states have adopted effective antifireworks legislation. The number of deaths from this cause has been reduced therefore in 1940 to 8 as compared with 20 in 1937. The total number of injuries has been reduced from 7,205 in 1937 to 4,462 in 1940. Although the improvement is considerable, it is still obvious that there can be no relaxation of effort in the attempt to prevent such unnecessary accidents. Hospitals throughout the country are asked to cooperate in filling out and prompt return of questionnaires which they will shortly receive in order that a still further improvement in the situation may be brought about."

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Pretty soft life! Nothing to do but eat, sleep and grow in comfort on S-M-A. It's a happy, healthy first year for the S-M-A fed infant because S-M-A promotes normal, comfortable growth.

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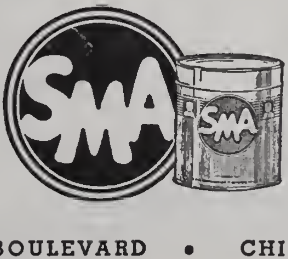

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IDAHO STATE MEDICAL ASSOCIATION

(Continued from p. 304)

WOMAN'S AUXILIARY

The Woman's Auxiliary to Idaho Medical Association held its annual meeting at Sun Valley, June 18-21, in conjunction with the association meeting.

A past-presidents' breakfast Wednesday morning opened the session. After an executive board meeting, Mrs. R. E. Mosiman of Seattle, president of the National Auxiliary, spoke at the Wednesday luncheon. She stressed the program for next year and answered questions of Idaho members.

Reports from all auxiliaries, state committee chairmen and officials were given at the general business meeting Thursday morning in the Ram of Challenger Inn. Mrs. P. M. Ellis acted as secretary for all sessions.

Following report of the nominating committee, officers were elected for the next year, including Mrs. W. W. Beck, Blackfoot, president; Mrs. R. T. Hopkins, Orofino, president-elect; Mrs. J. W. Marshal, Twin Falls, first vice-president; Mrs. W. O. Clark, Lewiston, second vice-president; Mrs. B. C. Eisenberg, Pocatello, recording secretary; Mrs. H. E. Dedman, Boise, treasurer.

Members of the executive board chosen by Mrs. Beck include Mrs. P. M. Ellis, Wallace; Mrs. Harmon Tremaine, Boise; Mrs. W. R. West, Idaho Falls; Mrs. S. M. Poindexter, Boise; Mrs. L. F. Lesser, Mountain Home; Mrs. S. L. Schiess, Shelley; Mrs. W. W. Beck, Jr., Mrs. E. N. Roberts, Pocatello; Mrs. R. D. Simonton, Boise.

Dr. Nelson Howard of Stanford University spoke on cancer at the Thursday luncheon.

(Concluded on p. 18)

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MEDICINE—Two Weeks Intensive Course starting October 6th. Two Weeks Course in Gastro-Enterology starting October 20th. One Month Course in Electrocardiography & Heart Disease every Month, except December.
FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course starting September 22nd. Informal Course every week.
GYNECOLOGY—Two Weeks Intensive Course starting October 20th. One Month Personal Course starting August 25th. Clinical and Diagnostic Courses every week.
OBSTETRICS—Two Weeks Intensive Course starting October 6th. Informal Course every week.
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Idaho State Medical Assn.................June 23-27, 1942—Sun oVlley
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Wallace — Boise

Oregon State Medical Society.................Sept. 2-5, 1941—Portland
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Portland — Portland

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Secretary, G. O. Matthews
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Washington State Obstetrical Association........Oct. 4, 1941—..........

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A physician is wanted in an eastern Washington town of 3500 population. Present incumbent has been established in general practice for fifteen years. A small capital will be helpful. Address P, care Northwest Medicine, 225 Cobb Bldg., Seattle.

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Physician wanted to act as locum tenens during September and first two weeks in October in an Oregon city. Would prefer a young physician prepared to do general practice. In reply state age, practical experience and salary desired. Address Dr. W. S. Thurtell, Newport, Oregon.

WOMAN'S AUXILIARY

(Concluded from p. 14)

Members of the new executive board met with Mrs. Beck Friday morning and heard her report of the national convention in Cleveland. Guest speaker was Mrs. J. L. Jones, president of the Utah auxiliary for the coming year.

A tea at the Lodge and dinner dance in the Lodge were scheduled for Thursday. Mrs. R. D. Simonton was social chairman for the women.

Dr. P. M. Ellis, new president of the men's organization, spoke briefly at the Friday luncheon.

Friday evening a dinner bridge was arranged for women members. Mrs. L. F. Lesser, *State Publicity Chairman*

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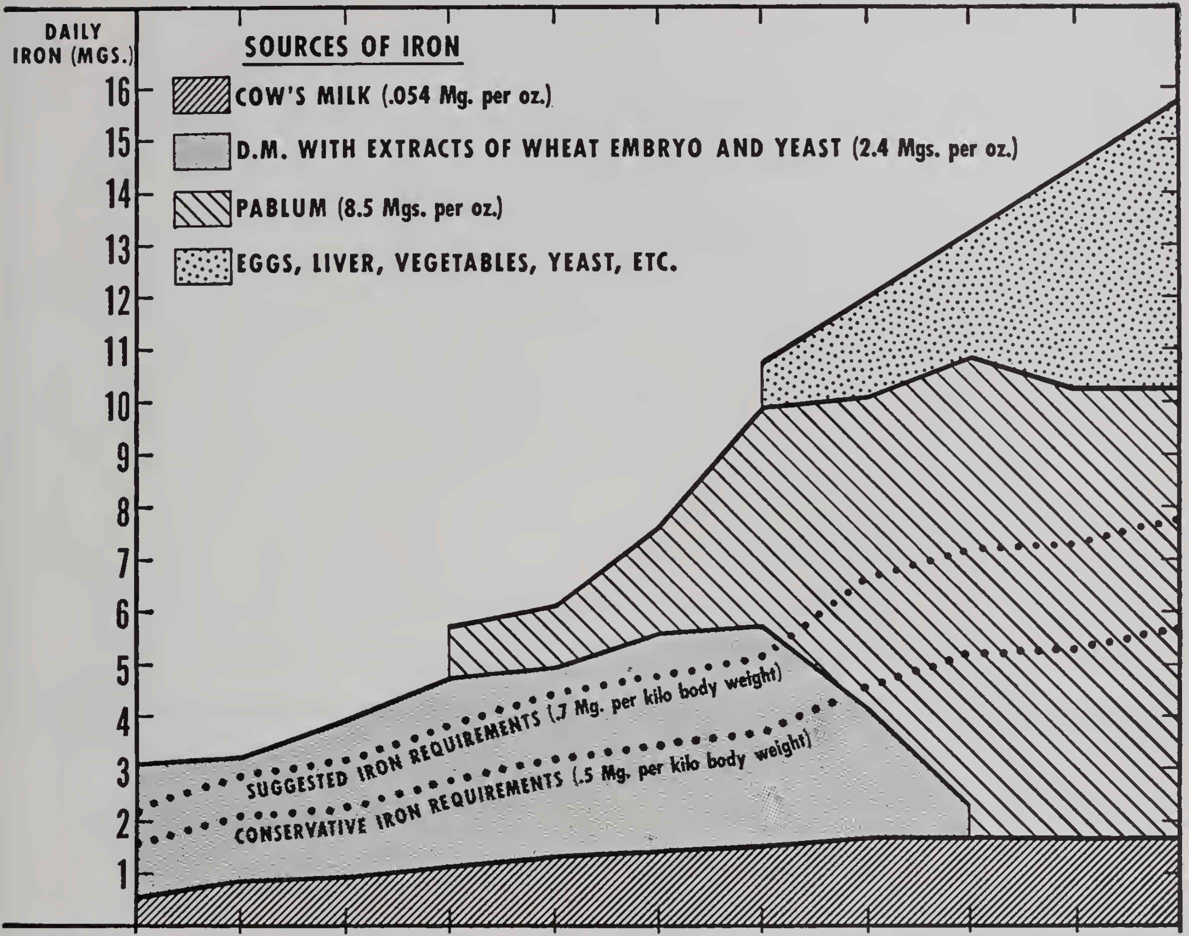
DURING THE FIRST TWO YEARS



AGE, Mos.	1/4	1	2	3	4	5	6	9	12	18	24
WEIGHT, lbs.	7	9	10	12	14	15	16	20	22	23	25
MILK, Oz.	10	16	18	21	25	26	28	32	32	32	32
D.M. WITH EXTRACTS OF WHEAT EMBRYO AND YEAST, Oz.	1	1	1¼	1½	1½	1¾	1¾	1	¼	0	0
PABLUM, Oz.	0	0	0	⅛	¼	¼	½	¾	1	1	1

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The excess iron thus supplied over iron requirements averages close to 75%, and is needed because some iron is unutilized — a large amount in certain cases. In rapidly growing, or poorly nourished infants, and in the presence of infection, the need for iron may be greater than the chart shows; in some cases, periodic hemoglobin determinations may show the need for iron therapy.

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*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., **23**, 201 (March), 1939.

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ALKALI HELPS REDUCE COMPLICATIONS OF SULFATHIAZOLE

The administration of an alkali, such as sodium bicarbonate, with sulfathiazole, and possibly also with sulfadiazine, two derivatives of sulfanilamide, is advised by Leon Schwartz, M.D.; Harrison F. Flippin, M.D.; John G. Reinhold, Ph.D., and Albert H. Domm, M.D., Philadelphia, in *The Journal of the American Medical Association* for August 16 as a means of decreasing the incidence and number of crystals of these drugs in the urine.

The four men point out that recent medical literature contains many reports of bloody urine, deficient secretion of urine, urinary stones and other complications associated with the use of these drugs. These kidney complications are due, in part if not entirely, to the presence of crystals of these drugs in the urinary tract and some of them necessitate a discontinuance of administration of the drug at a time when treatment is most desired.

To ascertain the effect of alkali on the incidence and number of crystals detected in the urine of patients receiving sulfathiazole or sulfadiazine, the four investigators administered sodium bicarbonate in an amount equal to that of the drug to 37 pneumonia patients and compared the urinary findings with those of 63 pneumonia patients who were not given an alkali. The incidence and number of crystals of the drug found in the urine samples were distinctly less in the group of patients receiving an alkali together with either sulfathiazole or sulfadiazine, particularly with the group receiving an alkali with sulfathiazole.

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MEDICINE—Two Weeks Intensive Course starting October 6th. Two Weeks Course in Gastro-Enterology starting October 20th. One Month Course in Electrocardiography and Heart Disease every month, except December.
FRACTURES and TRAUMATIC SURGERY—Two Weeks Intensive Course starting September 22nd. Informal Course every week.
GYNECOLOGY—Two Weeks Intensive Course starting October 20th. Twenty Hour Personal Course in Vaginal Approach to Pelvic Surgery starting November 3d. Clinical and Diagnostic Courses every week.
OBSTETRICS—Two Weeks Intensive Course starting October 6th. Informal Course every week.
OTOLARYNGOLOGY — Clinical and Special Courses starting every week.
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President, A. O. Adams, Spokane — Secretary, N. R. Brown, Spokane

North Pacific Pediatric Society....June 21, 1941—Vancouver, B. C.
Secretary, G. O. Matthews, Vancouver

Washington State Obstetrical Association........Oct. 4, 1941—..........

SO-CALLED ACIDITY OF HUMAN BODY IS A POPULAR FALLACY

"So-called acidity of the human body is a popular fallacy," *Hygeia, The Health Magazine* states in answer to an inquiry in a recent issue.

"An acid is a sour substance which has certain effects on the color of chemical test substances or indicators and which combines with alkalis to make neutral substances known as salts," *Hygeia* explains. "An alkali on the other hand is a bitter substance which has the opposite effect on chemical indicators and which combines with acids to make salts. Some acids and some alkalis are strong and therefore destructive while others are weak and relatively harmless. Some acids are useful, some poisonous; the same is true of alkalis.

"The human body is neutral with a strong alkali reserve. It never becomes acid except after death and its alkali reserve is reduced only in severe illness or starvation.

"There are, however, certain bodily secretions which are normally acid and which should be acid. These are the perspiration, the stomach secretions, the urine and possibly the saliva. Attempting to alkalize these normal acid secretions is foolish and useless."

DRUG FOR HOOKWORM HAS HAZARDS

All patients who are treated with tetrachlorethylene, an effective drug for clearing the system of hookworms, even in doses smaller than are usual, should be hospitalized or otherwise kept under close surveillance, J. H. Sandground, D.Sc., Indianapolis, advises in *The Journal of the American Medical Association* for August 9. He reports 2 cases in which the patients went into a profound coma or sleep after taking the drug. However, he says that for want of a better drug, these cases should not discourage the use of tetrachlorethylene.

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FEEDING PROGRESS

Days of Age	Drams at Each Feeding	Ounces of Feeding per 24 Hrs.
1	1	1
2	2	2
3	4	4
4	6	6
5	8	8
6	10	10
7	12	12

(8 drams = 1 ounce)

"MOST of the common milk mixtures have been used at various times with some degree of success—evaporated, acid and dried milks, and butter-flour mixtures. Those high in protein and carbohydrate and low in fat are the most suitable in concentrated formulas properly adapted to the limited digestive capacity of the premature. While lactic-acid milk with addition of 7 to 10 per cent by volume of Karo syrup yields twenty-five to thirty calories per ounce, evaporated milk with 5 to 10 per cent added Karo syrup is equally effective.

Processed or acid milks are advantageous because of the fine curds produced, the premature being particularly susceptible to curd indigestion. Nonfermentable carbohydrate in quantities similar to those used in normal feeding of infants may be added to any of these milks. The formula may be concentrated by decreasing the water, or adding powdered protein milk in place of extra amounts of sugar."

KUGELMASS: *"Newer Nutrition in Pediatric Practice."*

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WHY BABIES SMILE

There is no evidence to indicate that the smiles of very small babies are caused by conscious thinking, *Hygeia, The Health Magazine* states in a recent issue in answer to an inquiry.

'Observation with a movie camera has recorded that young infants often smile in their sleep," *Hygeia* continues, "but seldom when they are awake unless the skin around the zone near the mouth is gently stroked. The smile seen on the baby during sleep is thought to be of reflex origin, an unconscious act of which the baby may be entirely unaware. It should be remembered that the mouth and the lips are the most sensitive parts of the body in early infancy. Stimuli in this area, from within and without, are readily received and the reflex movement of some of the facial muscles respond to produce the smile."

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1 Empty one tightly packed measuring cup of S-M-A powder into bottle.

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3 Cap bottle and shake powder into solution. Feed at body temperature.

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CHANGE IN SPELLING

A change in the spelling of the name "Petrolagar" to "Petrogalar" has been announced by the Petrolagar Laboratories. The change is being made in both the product name and corporate name. Because it has never been the intention of the company to imply that agar-agar was used for any other purpose than as an emulsifying agent, the last syllable of the former name has been altered in favor of the new spelling.

Officials emphasized that no change has been made in the size of the package, price or formulae and that each of the five different types of the product will carry the new spelling "Petrogalar." The new corporate name is: Petrogalar Laboratories, Inc., and the address remains 8134 McCormick Boulevard, Chicago, Illinois.

PREMIUM REDUCTION

The Physicians Casualty Association of America has made a reduction in the $25 per week accident and health insurance of $1 per year; in the $50 per week accident and health insurance, of $2 per year and in the $75 per week accident and health insurance of $3 per year.

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FRACTURES and TRAUMATIC SURGERY — Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Informal Course available every week.

GYNECOLOGY — Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Twenty Hour Personal Course in Vaginal Approach to Pelvic Surgery November 3. Clinical and Diagnostic Courses every week.

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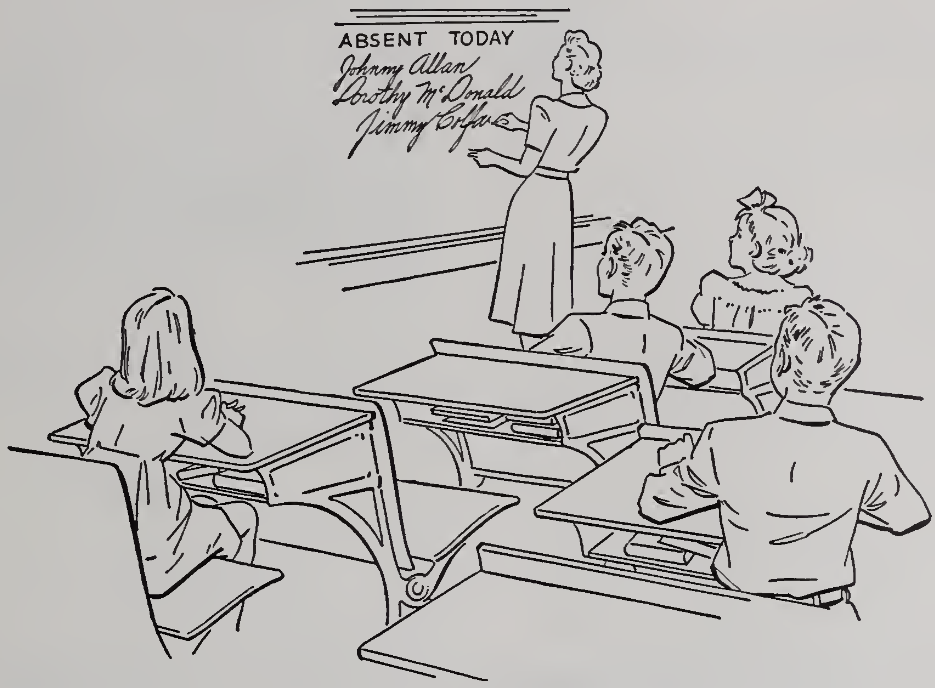

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CLINICAL FORUM

AN OBSTETRIC PROBLEM

Suggestion from the Maternal and Child Welfare Committee of the State of Idaho.

The patient presented herself for examination April 16, *Personal History:* She was 37 years of age; para-x and gravida-x. The account of her health was essentially negative except that she had suffered from rheumatism. Menstruation had been normal and regular, beginning at the age of 15.

Past Pregnancies: With the exception of her third delivery, which was a high forceps, all births were normal. The ages of these chanldren range from 3 to 19 years, their natal weights from 7 to 10 pounds.

Present Pregnancy: Last normal menstrual period was July 3, 1940. Quickening was noticed November 10; estimated time of delivery April 10, 1941. There was considerable nausea and vomiting during her first three months of gestation.

Physical Examination: Height, 5 feet 1 inch. Weight, 225 lbs. B. P. 132/70. Pulse, 100. Heart tones were poor. Measurements: I. Sp. 26, I. Cr. 29, C. D. 20, C. V. 11, Trans. outlet 10. Laboratory work was normal. Uterus appeared to be large and overdistended, fundus at the thoracic borded. The fetus was in a transverse position and floating. On May 5 the patient's weight was 231 lb., blood pressure 150/70, urine negative. There was no engagement of the presenting part and the patient was very uncomfortable. Roentgenogram showed a large fetus lying on its face in a transverse position with small parts dependent in lower uterine canal. May 12 her B. P. was 170/70. Urine contained albumin plus. She was very edematous. Position of the fetus was still the same with floating presenting part.

What do you suggest as to procedure?

COMMENTS ON PEDIATRIC PROBLEM IN SEPTEMBER ISSUE

First commentator states: One's first impression is that the child had nephritis. In that case it would be of assistance to know the blood pressure, of which there is no record. It probably was clear to the attending physician, but the undescribed graph in somewhat meaningless; also what is a "bilateral retrograde pyelogram?" Next to nephritis a tuberculous kidney is to be differentiated. A Mantoux test should be of help. Since the mother would expect some medicament from the doctor as indication of his concern and human interest in her child, a nonirritating diuretic would be in order.

Laboratory and cystoscopic data urge another picture. The "lymph" count does not suggest tuberculosis. The protruding left ureteral orifice clearly indicates some aberrant function of only that branch of the urinary system. Since the urine was smoky one would not expect to find bleeding from the ureter nor kidney pelvis, but from the kidney itself. Slight fever suggests bacteral invasion. Although no organisms were found, it is intimated that search for them was limited to one renal study. Repeated renal examination might have discovered some organism and perhaps finally some acid-fast bacilli. A Mantoux should be done more than once and the child kept under observation for some time.

A second commentator believes:

Probably this child had acute pyelonephritis which originated from the genitalia and progressed upward through the genital tract. In spite of the apparent seriousness of an infection, which is sufficient to produce bleeding, I have noticed clinically that pyelitis infections which show bloody urines recover more quickly than those without blood. So true is this fact that I would venture to predict recovery of such a child in a few days and that uneventfully.

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American Can Company has issued "The Canned Food Reference Manual" which describes canning technology, canned foods and human nutrition, public health aspects of canned food, useful facts about commercially canned foods. Methods of fabrication of the can are described, with basic operations in commercial canning. The information in this volume has been approved by the Council of Foods. A copy of the manual is obtainable from American Can Company, New York City.

MORE CONSERVATIVE ATTITUDE TOWARD APPENDECTOMY ADVISED

Additional evidence of the importance of a conservative attitude twoard operations for "chronic appendicitis" is presented in *The Journal of the American Medical Association* for September 20 in a report by Richard Warren, M.D., and H. Thomas Ballantine Jr., M.D., Boston.

From their study of 138 cases in which an uninflamed appendix had been removed because of abdominal pain, the authors conclude that "chronic appendicitis" is a clinical entity consisting of recurrent pain in the right lower portion of the abdomen which is usually unrelated to past or present disease conditions in the appendix. However, about three-fourths of the patients experienced partial or complete relief from the symptoms that they had before the operation and one-fourth remained unimproved or were made worse.

Patients with a long history and those with numerous attacks of pain did not have such a high percentage of good end results as did those with a short history or those with few attacks. Better results were achieved in men than in women. The mortality from the operation is low, but the morbidity (illness) and the period of incapacity cannot be ignored, the authors say.

"The results described," they declare, "should be regarded as grounds for the adoption of a more conservative rather than a less conservative attitude toward operation for chronic appendicitis."

Elaborating on the poorer results obtained in the group of patients with long histories and numerous attacks, the two men say that those results might be explained by the fact that when a patient complains of "innumerable" attacks for "years" one must be on guard for emotional or mental factors which might influence the picture.

"Appendectomy," they say, "as a form of psychotherapy (mental treatment) is not good treatment. It may be also that those persons with a short history or with only a few attacks were those with true digestive complaints of obscure nature and that appendectomy was only coincidental with the spontaneous remission of symptoms.

ADDITIONAL EVIDENCE OF THE VALUE OF SULFADIAZINE FOR PNEUMONIA

Additional evidence that sulfadiazine, a new derivative of sulfanilamide, may be considered the drug of choice in the treatment of pneumococcic pneumonia is presented in *The Journal of the American Medical Association* for September 6 by Harry F. Dowling, M.D.; Clarence R. Hartman, M.D.; Samuel J. Sugar, M.D., and Harry A. Feldman, M.D., Washington, D. C.

Their belief that sulfadiazine is preferable to two other sulfanilamide derivatives, sulfathiazole and sulfapyridine, is based on a study of 137 patients treated with sulfadiazine. Among 115 of the patients whose type of pneumococcic pneumonia was known, there were 13 deaths (11.3 per cent). This approximates the death rates recently reported by other investigators.

Reactions to the drug were infrequent and treatment effects more definite than those usually following treatment with sulfathiazole and sulfapyridine.

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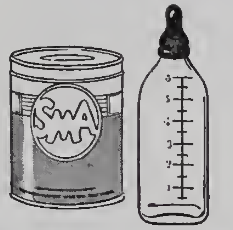

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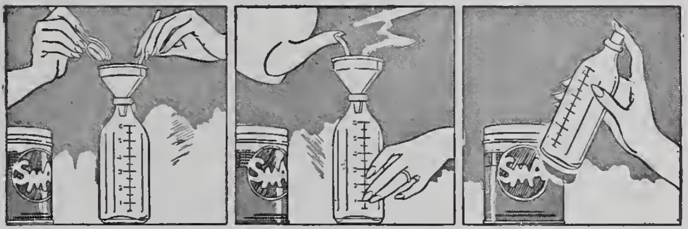

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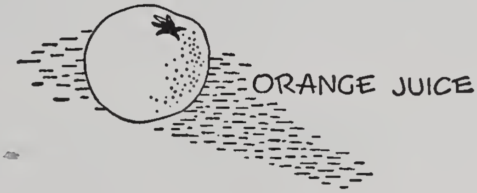

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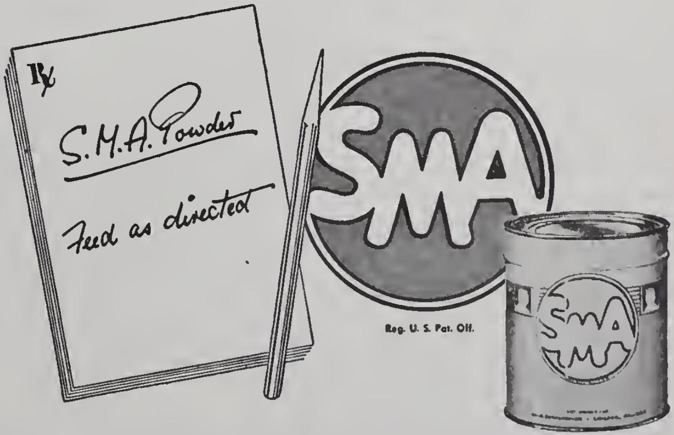

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Although severe reactions to liver extract administered by injection into a vein or under the skin are relatively infrequent, they none the less have presented a serious problem in treating patients with anemia when they did occur.

Histaminase is a drug which presumably neutralizes the free histamine, believed to be a substance released from the tissues into the blood and taking an active part in allergic processes.

The authors' report is based on their experience with 2 patients with pernicious anemia who acquired severe sensitivity to parenteral (into a vein or under the skin) administration of liver extract. Definite, temporary reduction of the reactions, which involved itching, nausea and vomiting, to liver extracts followed the administration of histaminase to the 2 patients.

"We feel," the authors say, "that a method by which the liver extract can be administered parenterally in therapeutic (adequate treatment) doses, as was done in the cases reported, has definite advantages over the previous methods of attempting to solve the problem of acquired sensitivity to liver."

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NORTHWEST MEDICINE

Vol. 40 JANUARY, 1941 No. 1

Attention, Please!

Greetings for New Year — Editorial
Is It Prelude to State Medicine? — Editorial
Medical Preparedness — Oregon Section

Indications for Vaginal Hysterectomy — Mattson
Lesions About Shoulder Joint — Steindler
Development of State Journal — Smith
Ski Injuries at Sun Valley — Brothers
Fungus Allergies — Schonwald

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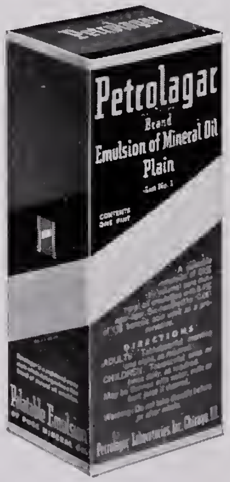

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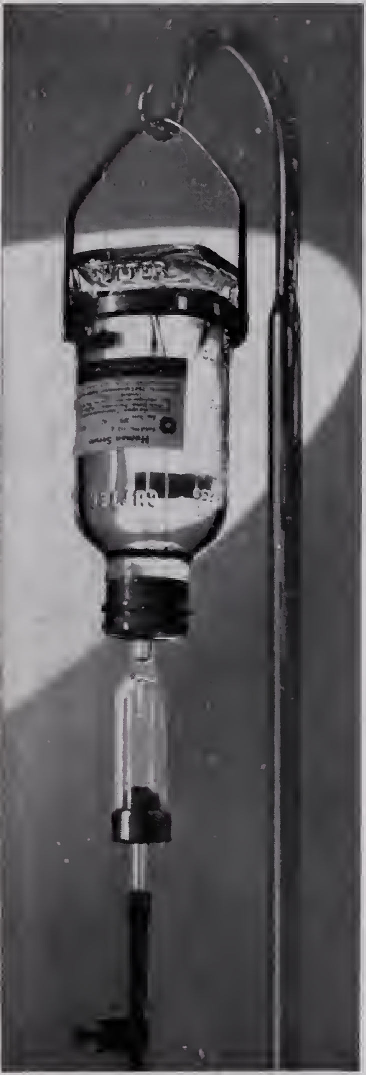

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NORTHWEST MEDICINE

Vol. 40 December, 1941 No. 12

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Endocrine Balance in Carbohydrate Metabolism — Soskin
Diagnosis and Treatment of Jaundice — Tumen
Neurologic Aspects of Poliomyelitis — Brown
Treatment of Poliomyelitis — Magnussen
Epidemiology of Poliomyelitis — Powers
Pathology of Poliomyelitis — Larson
Stilbesterol in Menopause — Kimball
Zinc Poisoning — Gocher

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1936. Mass. Agr. Expt. Sta. Bull. No. 338.
1937. Chemistry of Food and Nutrition, Fifth Edition, H. C. Sherman, MacMillan, N. Y.
1938. Nutrition Abstracts and Reviews 8, 281.
1939. Food and Life Yearbook of Agriculture, U. S. Dept. Agr., U. S. Government Printing Office, Washington, D. C.

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*Treatment of Menstrual Disorders With Pregnant Mares' Serum, *William H. Vogt, Jr.* and *Daniel L. Sexton,* A.J. of Obs. & Gyn., 42:1

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AUG 12 1942	AUG 7 1942
APR 7 1943	APR 7 1943
MAY 6 1943	JUN 18 1943
JUN 25 1943	JUN 25 1943
OCT 8 1943	OCT 4 1943
APR 28 1947	APR 28 1948
MAY 5 1947	
MAY 21 1948	MAY 25 1948
may 28	
JUL 27 1953	JUL 23 1953
APR 4 1955	MAR 28 1955
JUL 22 1955	JUL 15 1955
DEC 12 1958	NOV 14 1983
SEP 11 1959	
Sept 25, 1959	
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